

Exhibit A

Michael Birrer, M.D., Ph.D.

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON
TALCUM POWDER PRODUCTS
MARKETING, SALES PRACTICES,
AND PRODUCTS LIABILITY
LITIGATION

THIS DOCUMENT RELATES TO
ALL CASES

Case No. 16-2738
(FLW) (LHG)

MDL Docket No. 2738

Friday, March 29, 2019

- - - - -

The video deposition of MICHAEL BIRRER, M.D.,
Ph.D., taken pursuant to notice, was held at
the law offices of Butler Snow, LLP, One Federal
Place, Suite 1000, 1819 Fifth Avenue North,
Birmingham, Alabama, commencing at approximately
9:03 a.m., on the above date, before Lois Anne
Robinson, Registered Diplomate Reporter,
Certified Realtime Reporter, and
Notary Public for the State of Alabama.

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3 (Pages 6 to 9)

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<p>1 VIDEOGRAPHER: 2 We are now on the record. My name is 3 Devyn Mulholland. I'm a videographer for Golkow 4 Litigation Services. Today's date is March 29th, 5 2019. The time is 9:03 a.m. 6 This video deposition is being held in 7 Birmingham, Alabama, in the matter of Talcum 8 Powder Litigation, MDL Number 2738. The deponent 9 is Michael Birrer, M.D., Ph.D. 10 Counsel will be noted on the 11 stenographic record. The court reporter is Lois 12 Robinson and will now swear in the witness. 13 MICHAEL BIRRER, M.D., PH.D., 14 the witness, after having first been 15 duly sworn to tell the truth, the whole truth, 16 and nothing but the truth, was examined and 17 testified as follows: 18 EXAMINATION 19 BY MS. THOMPSON: 20 Q Dr. Birrer, I'm Margaret Thompson, and 21 I'll be taking your deposition today. 22 You've had your deposition taken 23 before; right? 24 A Correct.</p>	<p>1 It -- it eventually went to -- to court. They 2 have a panel up there of three judges, which sort 3 of prescreens it. 4 Q And you've also submitted a previous 5 report in this case; correct? 6 MS. CURRY: 7 Object to the form. 8 A Correct. 9 MS. THOMPSON: 10 Q That was in the Swan case? Does that 11 sound familiar? 12 A Yes. 13 Q Have any of your opinions -- and that 14 was in May 2017. Does that sound right? 15 A That sounds right. 16 Q Have any of your opinions in this case 17 changed since May 2017? 18 A No. 19 Q Have any of your opinions changed since 20 you were deposed in September of 2018? 21 A No. 22 Q I guess that would be a "no" if they 23 hadn't changed since 2017. 24 A It's consistent.</p>
Page 11	Page 13
<p>1 Q Including in the talcum powder 2 litigation; correct? 3 A Yes. 4 Q Have you had your deposition taken in 5 any other situation? 6 A I gave testimony in a case, but that 7 wasn't a deposition, I don't think. No. 8 Q And when was that? 9 A That was prior to the talc. It's -- 10 probably goes back, I want to say, 2015, 2012, 11 somewhere -- 12 Q And what -- sorry. 13 A Yeah. 14 Q What was the nature of that matter? 15 A I was in Massachusetts at the time. It 16 was a delayed diagnosis case. 17 Q A medical malpractice case? 18 A Medical malpractice, yes. 19 Q Were you testifying for the plaintiff 20 or for the defendant? 21 A Defendant. 22 Q Was it a physician or a doc- -- a 23 hospital? 24 A It was both. And it was in Maine.</p>	<p>1 Q And you're aware that the purpose of 2 today is for me to gain a thorough understanding 3 of what opinions you plan to give at a hearing or 4 trial? 5 A Yes. 6 Q And the basis for those opinions; 7 right? 8 A Yes. 9 Q And your report states that your 10 opinions are given to a reasonable degree of 11 scientific and medical certainty. 12 What does that mean to you? 13 A It means that, basically, more often 14 than not, they're correct. 15 Q And you are a medical doctor as well as 16 a Ph.D. researcher; correct? 17 A Correct. 18 Q Do you currently see patients? 19 A I do. 20 Q Do you currently diagnose ovarian 21 cancer in women? 22 A Yes. 23 Q How -- do you treat women with ovarian 24 cancer?</p>

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<p style="text-align: right;">Page 14</p> <p>1 A Yes.</p> <p>2 Q And would that primarily involve the</p> <p>3 medical aspects, including chemotherapy</p> <p>4 administration?</p> <p>5 A Yes.</p> <p>6 Q Do you perform any surgical procedures?</p> <p>7 A No.</p> <p>8 Q What --</p> <p>9 A I'm a medical oncologist.</p> <p>10 Q What --</p> <p>11 A I could perform it, but it wouldn't</p> <p>12 come out very well.</p> <p>13 Q I understand.</p> <p>14 What percentage of your time involves</p> <p>15 patient care versus research?</p> <p>16 A So --</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A -- right now I have a half-a-day clinic</p> <p>20 a week, and then the research component, I have a</p> <p>21 fully funded lab, probably two days a week. I'm</p> <p>22 the director of the cancer center, which also</p> <p>23 takes a fair amount of administrative</p> <p>24 responsibility.</p>	<p style="text-align: right;">Page 16</p> <p>1 A Yes.</p> <p>2 Q And does that pretty much cover the</p> <p>3 types of research that you would be doing in your</p> <p>4 lab --</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 MS. THOMPSON:</p> <p>8 Q -- or in a general sense?</p> <p>9 A I'm just trying to think if there was</p> <p>10 anything else. We obviously do a lot of</p> <p>11 review-type papers and articles. You know, I</p> <p>12 think that's pretty broad. I think it does,</p> <p>13 actually.</p> <p>14 Q When you do a review article, is that</p> <p>15 usually invited by the journal, or is that a</p> <p>16 topic that you have interest in that you submit</p> <p>17 as a publication?</p> <p>18 A Could be both. A lot of them are</p> <p>19 invited. But we have occasionally thought of</p> <p>20 areas that we thought were interesting and</p> <p>21 important and suggested it.</p> <p>22 Q And are authors or review articles</p> <p>23 generally intended to be experts in the field?</p> <p>24 MS. CURRY:</p>
<p style="text-align: right;">Page 15</p> <p>1 MS. THOMPSON:</p> <p>2 Q So administrative time --</p> <p>3 A Yeah.</p> <p>4 Q -- as well included in that?</p> <p>5 And how would you describe the focus of</p> <p>6 your laboratory search -- research currently?</p> <p>7 A Almost entirely on ovarian cancer and</p> <p>8 exploring detailing the genomics, the molecular</p> <p>9 basis for ovarian cancer and trying to translate</p> <p>10 that into better early detection, diagnosis and</p> <p>11 treatment.</p> <p>12 Q Are you doing in vitro as well as in</p> <p>13 vivo research?</p> <p>14 A Correct.</p> <p>15 Q And have published in both animal</p> <p>16 studies as well as cellular studies?</p> <p>17 A Yes.</p> <p>18 Q Have you published with immortalized</p> <p>19 cells?</p> <p>20 A Yes.</p> <p>21 Q Have you published research with human</p> <p>22 tissue?</p> <p>23 A Yes.</p> <p>24 Q Have you published human trials?</p>	<p style="text-align: right;">Page 17</p> <p>1 Object to the form.</p> <p>2 A More often than not, yes. But</p> <p>3 frequently on my reviews, I'll have some junior</p> <p>4 people.</p> <p>5 MS. THOMPSON:</p> <p>6 Q With -- with a senior author</p> <p>7 usually --</p> <p>8 A (Nods affirmatively.)</p> <p>9 Q -- correct?</p> <p>10 A Correct.</p> <p>11 Q And that would be, I would think,</p> <p>12 because readers of a journal want to know that</p> <p>13 it's an expert in the field that's providing the</p> <p>14 information in a review article; right?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I think so, yeah.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Would you agree with me that it would</p> <p>20 be unethical at this point in time to design a</p> <p>21 prospective study in which women were exposed to</p> <p>22 talcum powder in the genital area and follow over</p> <p>23 time?</p> <p>24 MS. CURRY:</p>

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<p style="text-align: right;">Page 18</p> <p>1 Object to the form.</p> <p>2 A Prospectively and randomized and --</p> <p>3 could you just --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Let's start with just prospectively.</p> <p>6 A I -- I think it would be a --</p> <p>7 interesting question. I don't think it would be</p> <p>8 valuable.</p> <p>9 Q How about a randomized trial? Would it</p> <p>10 be ethical?</p> <p>11 A No. I don't think it would be valuable</p> <p>12 at all.</p> <p>13 Q But I didn't ask about valuable.</p> <p>14 What about ethical?</p> <p>15 A Well, val- -- if it's not valuable, it</p> <p>16 should -- it wouldn't be of great concern to do</p> <p>17 that. I'm not sure what you're asking.</p> <p>18 Q Well, I'm asking if you -- if you have</p> <p>19 a carcinogen, even a possible carcinogen, you</p> <p>20 could not design and get a trial through IRB</p> <p>21 using that product and a control group; correct?</p> <p>22 MR. MIZGALA:</p> <p>23 Object to form.</p> <p>24 A I guess -- I -- I see what -- now I see</p>	<p style="text-align: right;">Page 20</p> <p>1 A And this is -- this is a -- let me get</p> <p>2 my glasses -- supplemental materials received by</p> <p>3 me after this was done.</p> <p>4 Q Okay.</p> <p>5 A Okay?</p> <p>6 Q And, so, "received by" you meant the</p> <p>7 lawyers for Johnson & Johnson provided those</p> <p>8 supplemental materials to you?</p> <p>9 A It was a little bit of both. I mean,</p> <p>10 some of this I wasn't privy to, so I got it</p> <p>11 provided to me, and some of these were additional</p> <p>12 articles that I was -- I pulled out.</p> <p>13 Q Okay. And I've marked as Exhibit 1</p> <p>14 your expert report.</p> <p>15 (DEPOSITION EXHIBIT NUMBER 1</p> <p>16 WAS MARKED FOR IDENTIFICATION.)</p> <p>17 MS. THOMPSON:</p> <p>18 Q Do you --</p> <p>19 Do you have a copy? You're good on</p> <p>20 that?</p> <p>21 A And mine's -- mine's thicker than</p> <p>22 yours, so -- it's got my CV in there.</p> <p>23 Q I separated out your CV. So -- well,</p> <p>24 good. But that's a good observation.</p>
<p style="text-align: right;">Page 19</p> <p>1 what you're asking.</p> <p>2 So my position on that is that talc</p> <p>3 is -- I don't believe talc is a carcinogen.</p> <p>4 MS. THOMPSON:</p> <p>5 Q I understand. But there are others</p> <p>6 that do.</p> <p>7 And, so, is it your opinion that an IRB</p> <p>8 would let a study through using what has been</p> <p>9 designated as a possible carcinogen, say, for</p> <p>10 example, IARC?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I have no idea.</p> <p>14 MS. THOMPSON:</p> <p>15 Q All right. So the ground rules are</p> <p>16 we'll try not to interrupt each other. Let me</p> <p>17 know if I ask a bad question or one that you</p> <p>18 don't understand, and I'll expect you to answer</p> <p>19 honestly. Fair enough?</p> <p>20 A Yes.</p> <p>21 Q If you need a break, let me know.</p> <p>22 What did you bring with you today?</p> <p>23 A I have my expert report right here.</p> <p>24 Q And is that all you brought with you?</p>	<p style="text-align: right;">Page 21</p> <p>1 And -- and I marked as Exhibit 2 your</p> <p>2 CV.</p> <p>3 A Okay.</p> <p>4 (DEPOSITION EXHIBIT NUMBER 2</p> <p>5 WAS MARKED FOR IDENTIFICATION.)</p> <p>6 MS. THOMPSON:</p> <p>7 Q And that should --</p> <p>8 And you're good on that, too?</p> <p>9 MS. CURRY:</p> <p>10 Thank you.</p> <p>11 MS. THOMPSON:</p> <p>12 Q That should -- those combined should be</p> <p>13 the same thickness of what you've brought.</p> <p>14 And I also brought the Notice of</p> <p>15 Deposition, which I'm going to hand you.</p> <p>16 (DEPOSITION EXHIBIT NUMBER 3</p> <p>17 WAS MARKED FOR IDENTIFICATION.)</p> <p>18 MS. THOMPSON:</p> <p>19 Q And this is the one with objections.</p> <p>20 Have you seen this before, Dr. Birrer?</p> <p>21 A Yes.</p> <p>22 Q And did you look at the request on</p> <p>23 the -- on this document?</p> <p>24 A Yes.</p>

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<p style="text-align: right;">Page 22</p> <p>1 Q Is there -- and there's nothing that 2 was responsive to any of these requests? 3 MS. CURRY: 4 Objection. Subject to the objections 5 that were made by counsel. 6 MS. THOMPSON: 7 Q Subject -- 8 MS. THOMPSON: 9 Sorry. 10 Q Subject to the objections. 11 A Yeah. 12 Q So where would you keep your file for 13 the litigation? 14 MS. CURRY: 15 And I'm sorry. Just to clarify for the 16 record, there is a small production at the back 17 that incorporates the -- 18 MS. THOMPSON: 19 Yes. 20 MS. CURRY: 21 -- invoice as well as the supplemental 22 fee schedule and the supplemental list of 23 materials. 24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 24</p> <p>1 Q -- this litigation? 2 And be careful not to interrupt just 3 because it makes our court reporter's job a 4 little more difficult. 5 How much money have you been paid total 6 by Johnson & Johnson in talcum powder litigation? 7 A To date, nothing. 8 Q You haven't been paid for any of the 9 other cases that you've testified in? 10 A Correct. 11 Q Why is that? 12 A I'm a lousy businessman. I haven't 13 invoiced for Swan yet and I haven't invoiced for 14 Brower. But I can -- I can estimate the hours. 15 Q Go ahead and estimate. 16 A Swan I think is around 80 hours -- 17 Q Okay. 18 A -- because it was the initial case. It 19 was a bundled -- bundled five cases, so involved 20 a lot of review. And the deposition alone was 21 quite long. I remember like it was yesterday. 22 And, then, Brower was probably about 40 23 hours. 24 Q Okay.</p>
<p style="text-align: right;">Page 23</p> <p>1 Right. 2 Q So the supplemental material list that 3 you brought with you today, Dr. Birrer, is 4 attached to the back of this notice with 5 objections; correct? 6 A That's the same as this. Yes. 7 Q Yes. 8 A Yeah. Uh-huh. 9 Q And also attached to this -- this 10 notice with objections are your fees; correct? 11 A Correct. 12 Q And are -- are those all the invoices 13 that you have submitted thus far? 14 A Yes. 15 Q And how much -- and from -- this 16 invoice that's attached to Exhibit 3 goes through 17 March 17th. 18 How much time would you say you have 19 spent since March 17th preparing for the case? 20 A I'd say probably put another 15 hours, 21 And I haven't invoiced that yet. 22 Q Okay. And you have testified in other 23 cases for the defendants in -- 24 A Correct.</p>	<p style="text-align: right;">Page 25</p> <p>1 A And those invoices are being 2 constructed. 3 Q And you're charging those at the same 4 rate as in your fee schedule -- 5 A That's right. 6 Q -- attached to this document? 7 A That's right. 8 Q Okay. When were you first approached 9 by Johnson & Johnson as -- about serving as an 10 expert in talcum powder litigation? 11 A So that was before the -- that was the 12 Blaes or Swan case. I believe it was in 13 December, around November, December of 2016. 14 Q '16? 15 A Thank you. Time flies. 16 Q Only because I know that the report was 17 submitted in May, so -- 18 A (Nods affirmatively.) 19 Q -- I'm assuming that you didn't work 18 20 months on that -- 21 A No. 22 Q -- case. 23 And you were asked in -- for this 24 report that you just submitted, to address the</p>

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<p style="text-align: right;">Page 26</p> <p>1 biological plausibility of the plaintiffs' theory 2 that cosmetic talcum powder can cause ovarian 3 cancer. Right? 4 A Correct. 5 Q And that would be the stand- -- from 6 the standpoint of the genomics and molecular 7 biology that is your expertise; correct? 8 MS. CURRY: 9 Object to the form. 10 A So I think they were asking me in the 11 big picture the biologic plausibility of talc 12 being involved in the -- causing ovarian cancer 13 and then my scientific experience, even clinical 14 experience, would factor into -- to -- to that 15 expert opinion. 16 MS. THOMPSON: 17 Q Was that a different opinion than what 18 you were asked to provide in the previous cases 19 that you testified in? 20 MS. CURRY: 21 Object to the form. 22 A Previously -- the answer, I believe, is 23 no. But I was asked for general causation 24 before. This was a more -- somewhat more narrow</p>	<p style="text-align: right;">Page 28</p> <p>1 with an increased risk of epithelial ovarian 2 cancer? 3 A Correct. 4 Q Is it your opinion that the genital use 5 of talcum powder is not a risk factor for 6 epithelial ovarian cancer? 7 A Correct. 8 Q Is it your opinion that genital use of 9 talcum powder products does not cause ovarian 10 cancer? 11 A Correct. 12 Q Is it your opinion that the genital use 13 of talcum powder products does not cause ovarian 14 cancer in some women? 15 MS. CURRY: 16 Object to the form. 17 A Correct. 18 MS. THOMPSON: 19 Q And that would be ever. 20 MS. CURRY: 21 Object -- object to the form. 22 A No data to support that. 23 MS. THOMPSON: 24 Q Is it your opinion that the genital use</p>
<p style="text-align: right;">Page 27</p> <p>1 expert opinion. 2 MS. THOMPSON: 3 Q So in this case, you're not providing 4 general causation opinions. You're providing the 5 biological mechanism, plausibility opinions; 6 correct? 7 A Well, the title -- 8 MS. CURRY: 9 Object to the form. 10 A The title on the expert report is for 11 General Causation For the Daubert Hearing. But 12 my understanding was -- was to focus extensively, 13 if you will, on the biologic plausibility. 14 MS. THOMPSON: 15 Q And because biological plausibility is 16 part of general causation; correct? 17 A Correct. 18 Q But it's not the whole of general 19 causation. Is that your understanding? 20 A Correct. 21 Q So I want to make sure that I 22 understand your opinions. 23 Is it your opinion that the perineal 24 use of talcum powder products is not associated</p>	<p style="text-align: right;">Page 29</p> <p>1 of talcum powder does not contribute to the 2 development of epithelial ovarian cancer? 3 A Yes. 4 Q And do you say that there's no data to 5 support that as well? 6 A Correct. 7 Q Is it your opinion that genital use of 8 talcum powder does not contribute to the 9 development of ovarian cancer in some women? 10 MS. CURRY: 11 Object to the form. 12 A There's no data to support that either. 13 MS. THOMPSON: 14 Q So the answer is yes? 15 A Yes. 16 Q Is it your opinion that any proposed 17 biologic mechanism for how the genital use of 18 talcum powder products could cause epithelial 19 ovarian cancer is not plausible? 20 MS. CURRY: 21 Object to the form. 22 A I would agree with that statement. 23 It's not biologically plausible. 24 MS. THOMPSON:</p>

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<p style="text-align: right;">Page 30</p> <p>1 Q Is it your opinion that any proposed 2 biologic mechanism for how the genital use of 3 talcum powder products might contribute to the 4 development of ovarian cancer is not plausible? 5 MS. CURRY: 6 Object to the form. 7 A There's no data for that either. 8 MS. THOMPSON: 9 Q So the answer would be yes? 10 A Yes. 11 Q Do you intend to give opinions on 12 whether talc particles can reach the ovaries? 13 A I believe on my expert report and in -- 14 and I'm more than happy to talk about it -- 15 reviews the migration theories. 16 Q Do you consider yourself to be an 17 expert in that area? 18 A I think that those studies are 19 relatively straightforward and, based upon my 20 experience that, I would be relatively easy to 21 interpret those. 22 Q Do you feel like you would be in a 23 better position than a gynecologist or 24 gynecologic oncologist?</p>	<p style="text-align: right;">Page 32</p> <p>1 Object to the form. 2 A Correct. 3 MS. THOMPSON: 4 Q Are all the opinions contained in your 5 report that you will be providing in this case? 6 A That's a tough question to ask because 7 I don't know what you're gonna ask me. 8 Q Fair enough. 9 Can you think of any areas, sitting 10 here today, that you intend to testify in other 11 than the migration and transport of particles and 12 the molecular and genomics of cellular tissue 13 response to talc? 14 MS. CURRY: 15 Object to the form. 16 A Well, that's the bulk of my expert 17 report. I'm -- again, it depends on what you ask 18 me within the construct of general causation. 19 I'm willing to talk about some of that. 20 MS. THOMPSON: 21 Q Okay. I understand. 22 A Uh-huh. 23 Q And you are not an epidemiologist; 24 correct?</p>
<p style="text-align: right;">Page 31</p> <p>1 A Yes. 2 Q Have you found any new expertise in the 3 migration or transport of particles in the female 4 reproductive system since 2017? 5 MS. CURRY: 6 Object to the form. 7 A I'm not sure what you mean by "found 8 any new expertise." In the literature or my own 9 experience? 10 MS. THOMPSON: 11 Q Do you believe that you have more 12 expertise in that subject than you did in 2017? 13 A I think that it's comparable. 14 Q So that would be no additional 15 expertise since 2017, when you testified 16 previously? 17 MS. CURRY: 18 Object to the form. 19 A Not that I can identify as -- as we're 20 discussing this. 21 MS. THOMPSON: 22 Q And same for 2018, when you gave a 23 deposition in -- in a talcum powder case? 24 MS. CURRY:</p>	<p style="text-align: right;">Page 33</p> <p>1 A I don't have a degree in epidemiology. 2 But I have training. 3 Q So would you agree that your 4 understanding of epidemiology is general in 5 nature? 6 MS. CURRY: 7 Object to the form. 8 A So in order to be a, you know, 9 laboratory-based scientist in this field and a 10 clinician to treat patients, you certainly need 11 to have an understanding of epidemiologic 12 studies, so I have that understanding. And I 13 think that it gives me the ability to assess 14 epidemiologic studies and to draw conclusions 15 from them. 16 MS. THOMPSON: 17 Q But if you're looking for more nuanced 18 or more comprehensive epidemiological experience, 19 you would look to an actual epidemiologist; 20 correct? 21 MS. CURRY: 22 Object to the form. 23 A Well, I think it would depend on the 24 question that's being asked.</p>

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<p style="text-align: right;">Page 34</p> <p>1 MS. THOMPSON: 2 Q Well, for example, in the consortium 3 that you publish with, there are specific 4 epidemiologists that publish with the group; 5 correct? 6 A Which consortium are you referring to? 7 Q There are several? 8 A Yes. 9 Q Take -- take the Ovarian Cancer 10 Association Consortium. 11 A The GOS? 12 Q No. OCAC or -- 13 A Okay. 14 Q There are specific epidemiologists that 15 I assume are recruited to -- to provide the 16 epidemiology experience in that consortium; 17 correct? 18 A There are epidemiologists in that 19 consortium. I will point out there are lots of 20 other people and scientists. 21 Q And -- and -- and you would be sought 22 out for that type of consortium because of your 23 molecular experience; correct? 24 MS. CURRY:</p>	<p style="text-align: right;">Page 36</p> <p>1 comments, and they're all listed in terms of 2 biologic plausibility. And then, of course, I 3 spent a lot of time on Dr. Saed. 4 MS. THOMPSON: 5 Q My question, though, is which of the 6 plaintiff experts were you asked to offer 7 criticism of? 8 MS. CURRY: 9 Object to the form. 10 A So I reviewed the entire list, and 11 that's listed in the materials. I think it's on 12 page -- 13 MS. THOMPSON: 14 Q 28? 15 A -- 28 and 29. 16 Q Okay. Let's go ahead and go -- do -- 17 did you read all of these experts -- expert 18 reports? 19 A I looked through them, yes. 20 Q And each one? 21 A Correct. 22 Q All right. Let's go through each one 23 and have you tell me what you gleaned from each 24 expert report.</p>
<p style="text-align: right;">Page 35</p> <p>1 Object to the form. 2 A Well, I would add to that that I think 3 from a -- sort of a clinical standpoint we 4 provide some reality testing in terms of 5 whether -- what they're observing is actually 6 meaningful. 7 MS. THOMPSON: 8 Q Yes. So it would be for your 9 experience as a clinician in genomics and 10 molecular researcher; right? 11 A Yes. 12 Q That makes sense. 13 You're not a gynecologist or 14 gynecologic oncologist; correct? 15 A Correct. 16 Q Were you asked to offer criticism of 17 plaintiff experts and their opinions? 18 MS. CURRY: 19 Object to the form. 20 A So in my expert report, I really 21 reviewed the primary literature, and with -- with 22 then integrating that into the arguments made by 23 plaintiffs' expert witnesses. So you see in a 24 section there I began to look at individuals'</p>	<p style="text-align: right;">Page 37</p> <p>1 MS. CURRY: 2 Object to the form. 3 MS. THOMPSON: 4 Q Ann McTiernan, do you know Ann 5 McTiernan? 6 A I don't know her personally. 7 Q What's her field of expertise? 8 A I would have to check that. 9 Q So you don't remember here today 10 what -- 11 A Well, you're reviewing, I think -- 12 let's be honest, 300 pages. I'm not going to be 13 able to go through those systematically. 14 Q Well -- 15 A But if you look at my report, it very 16 specifically addressed some of the flaws in the 17 experts' opinions regarding migration of talc. 18 Q I -- I understand. But my question is 19 do you know what Dr. McTiernan's area of 20 expertise is? And it's fine if you don't. 21 A I'd have to look it up. 22 Q Okay. Do you know Dr. Carson's area of 23 expertise? 24 A I have never met him, and I don't know</p>

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<p style="text-align: right;">Page 38</p> <p>1 him.</p> <p>2 Q Have you met Dr. McTiernan?</p> <p>3 A No.</p> <p>4 Q What is Dr. Clarke-Pearson's area of</p> <p>5 expertise?</p> <p>6 A Clarke-Pearson is a gynecological</p> <p>7 oncologist, former department chair at UNC. Now</p> <p>8 he's stepped down.</p> <p>9 Q And do you know Dr. Clarke-Pearson?</p> <p>10 A I've met him.</p> <p>11 Q And what about Dr. Kessler?</p> <p>12 A I've never met Dr. Kessler.</p> <p>13 Q What's his area of expertise?</p> <p>14 A I can't quote you that.</p> <p>15 Q What's Dr. Smith's area of expertise?</p> <p>16 A I think Dr. Smith's pretty -- actually,</p> <p>17 I can't tell you.</p> <p>18 Q And Dr. Saed, I think we know.</p> <p>19 What about Dr. Siemiatycki?</p> <p>20 A Uh-uh. No.</p> <p>21 Q Dr. Wolf?</p> <p>22 A I've met Judith. She's a gynecologic</p> <p>23 oncologist.</p> <p>24 Q And do you know Dr. Zelikoff's area of</p>	<p style="text-align: right;">Page 40</p> <p>1 experiments?</p> <p>2 A No. Laboratory-based?</p> <p>3 Q Laboratory, yes.</p> <p>4 A No.</p> <p>5 Q What did you know about talcum powder</p> <p>6 and a possible link to ovarian cancer before you</p> <p>7 were approached to serve as an expert in 2017?</p> <p>8 A So it was not something that we dealt</p> <p>9 with clinically. We never counseled patients.</p> <p>10 Scientifically, it never really was part of my</p> <p>11 laboratory effort. I didn't know really -- I</p> <p>12 didn't know anybody working with it in the lab.</p> <p>13 And -- and, you know, to be fair, I would say</p> <p>14 that I was aware of the sort of concept that some</p> <p>15 people -- some epidemiologic studies were being</p> <p>16 done trying to determine relationship of talc</p> <p>17 exposure to ovarian cancer. And that's about it.</p> <p>18 Q Were you -- were you aware of the</p> <p>19 issues raised by Dr. Woodruff and others in the</p> <p>20 '70s about possible contamination with asbestos?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A No.</p> <p>24 MS. THOMPSON:</p>
<p style="text-align: right;">Page 39</p> <p>1 expertise?</p> <p>2 A I don't know her.</p> <p>3 Q Nor her area of expertise?</p> <p>4 A Correct.</p> <p>5 Q What about Dr. Plunkett? Do you know</p> <p>6 her area of expertise?</p> <p>7 A I don't.</p> <p>8 Q Dr. Moorman, do you know her area of</p> <p>9 expertise?</p> <p>10 A Don't know her. No.</p> <p>11 Q Dr. Smith-Bindman, do you know her area</p> <p>12 of expertise?</p> <p>13 A No.</p> <p>14 Q Do you know the area of expertise of</p> <p>15 Dr. Kane?</p> <p>16 A Nope.</p> <p>17 Q Dr. Levy?</p> <p>18 A No.</p> <p>19 Q Dr. Singh?</p> <p>20 A No.</p> <p>21 Q Were you asked by Johnson & Johnson to</p> <p>22 perform any experiments?</p> <p>23 A No.</p> <p>24 Q Did you offer to perform any</p>	<p style="text-align: right;">Page 41</p> <p>1 Q Did you have any opinions about whether</p> <p>2 talcum powder could cause ovarian cancer before</p> <p>3 you were approached to serve as an expert?</p> <p>4 A Well, my sense was that it wasn't a</p> <p>5 factor.</p> <p>6 Q And what was --</p> <p>7 A Because we -- again, we weren't -- we</p> <p>8 weren't using it in the clinic. We weren't</p> <p>9 talking about it. There were essentially no</p> <p>10 presentations in the biologic plausibility within</p> <p>11 any of the scientific meetings that I would go</p> <p>12 to.</p> <p>13 Q And at that time, that's what your</p> <p>14 impression, at least, would have been based on?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Yeah.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Did you write your report?</p> <p>20 A Yes.</p> <p>21 Q Every word?</p> <p>22 A Yes.</p> <p>23 Q Did you choose the literature to cite?</p> <p>24 A So I pulled out most of that myself,</p>

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<p>1 went back and did a reference list and then</p> <p>2 pulled more. As I said before, the expert</p> <p>3 reports would have been provided from counsel.</p> <p>4 There may have been some papers that I</p> <p>5 said, hey, I don't have this. Can you pull this</p> <p>6 out? And then they would -- they would provide</p> <p>7 it to me.</p> <p>8 Q And there are -- just so I understand</p> <p>9 the literature --</p> <p>10 A Uh-huh.</p> <p>11 Q -- there's literature that you actually</p> <p>12 cite in the report in footnotes; right?</p> <p>13 A Correct.</p> <p>14 Q And then there's another list at the</p> <p>15 end of the report that's considered -- that's</p> <p>16 titled "Materials Reviewed and Considered by Dr.</p> <p>17 Birrer"; right?</p> <p>18 A That's right.</p> <p>19 Q And can I assume that the literature</p> <p>20 that are actually cited in the footnotes is</p> <p>21 literature that you felt was particularly</p> <p>22 significant?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 of information, I did that by searching.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And what search engines did you use?</p> <p>4 A It was mostly PubMed, which is</p> <p>5 something we use all the time.</p> <p>6 Q And did you -- what search terms did</p> <p>7 you use?</p> <p>8 A Ovary, ovarian cancer, talc. So the</p> <p>9 ones you -- you'd predict. And that doesn't</p> <p>10 necessarily generate the entire list. Right? I</p> <p>11 mean, you get the list and then you look at the</p> <p>12 papers, go back to the references in those</p> <p>13 papers, and then you see if you -- you're missing</p> <p>14 out. Then you pull out more. And as you go</p> <p>15 through this iteration, you begin to find out</p> <p>16 that you're identifying the same patient -- the</p> <p>17 same papers. So then you begin to get an idea</p> <p>18 that you have the sum total of what you need.</p> <p>19 Q And have you saved those papers</p> <p>20 anywhere?</p> <p>21 A So those were -- the way that worked</p> <p>22 was they came in, mostly computer-based, and then</p> <p>23 I would look at those, extract what I wanted, and</p> <p>24 then construct the report. And that was all done</p>
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<p>1 A Yeah. So the idea here was to try to</p> <p>2 provide some guidance as to where that reference</p> <p>3 was relevant within the document. That's why</p> <p>4 it's on each page. At the end is a sort of sum</p> <p>5 total.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Okay.</p> <p>8 A Yeah.</p> <p>9 Q Did you choose any quotes that are</p> <p>10 included in your expert report yourself?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 MS. THOMPSON:</p> <p>14 Q It was a bad question.</p> <p>15 Did you choose the quotes that are</p> <p>16 included in your expert report?</p> <p>17 A Correct.</p> <p>18 Q Did you choose the language that you</p> <p>19 used to criticize the plaintiffs' experts?</p> <p>20 A Correct.</p> <p>21 Q Did you perform any searches?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A In order to generate the original body</p>	<p>1 in the computer.</p> <p>2 Q But what happened to the articles?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Well, they'd be computer-based, or</p> <p>6 there's backup, I believe, some backup copies</p> <p>7 here on everything.</p> <p>8 MS. THOMPSON:</p> <p>9 Q So -- so everything that you looked at</p> <p>10 would be in your materials considered list and</p> <p>11 the supplemental materials considered list?</p> <p>12 A Correct. Yep.</p> <p>13 Q Did you look at plaintiff expert</p> <p>14 depositions?</p> <p>15 A Correct.</p> <p>16 Q Which ones?</p> <p>17 A So I looked at the deposition of</p> <p>18 Dr. Saenz. I think that's listed on supplemental</p> <p>19 deposition.</p> <p>20 MS. CURRY:</p> <p>21 I believe she asked about plaintiff</p> <p>22 expert deposition.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Plaintiff.</p>

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<p>1 A I'm sorry. I'm on the wrong one. So</p> <p>2 that would be Dr. Saed.</p> <p>3 Q Uh-huh.</p> <p>4 A And I think -- let's go back and look.</p> <p>5 I think -- yeah. It was 23 and 24 are -- were</p> <p>6 both the Saed depositions. I think that's it.</p> <p>7 Q In the file -- the backup file that you</p> <p>8 mentioned that's here, is that on a thumb drive</p> <p>9 or what's --</p> <p>10 MS. CURRY:</p> <p>11 Object to the form. They're actually</p> <p>12 my -- the lawyer's files. I just brought a copy</p> <p>13 of the references in case we needed to refer to</p> <p>14 everything. But it's not -- actually not</p> <p>15 Dr. Birrer's file.</p> <p>16 MS. THOMPSON:</p> <p>17 Q So there's no electronic file that you</p> <p>18 possess?</p> <p>19 A Yeah.</p> <p>20 Q Did you make any notes or highlights on</p> <p>21 any of the articles that --</p> <p>22 A (Shakes head negatively.)</p> <p>23 Q And in addition to Dr. Saed's</p> <p>24 deposition, you have listed two drafts of his</p>	<p>1 MS. CURRY:</p> <p>2 Here you go.</p> <p>3 A This supplemental list with objections</p> <p>4 or the extra paper?</p> <p>5 MS. THOMPSON:</p> <p>6 Q And you reviewed some reports from</p> <p>7 governmental and regulatory agencies; correct?</p> <p>8 A Correct.</p> <p>9 Q I'll go ahead and mark those. We're</p> <p>10 gonna discuss them more later.</p> <p>11 (DEPOSITION EXHIBIT NUMBER 4</p> <p>12 WAS MARKED FOR IDENTIFICATION.)</p> <p>13 MS. THOMPSON:</p> <p>14 Q You've looked at the Health Canada's</p> <p>15 recent draft assessment; correct?</p> <p>16 A Yes.</p> <p>17 Q When did you first see that?</p> <p>18 A It was in a deposition of Dr. Saenz's.</p> <p>19 Q And do you know when that was first</p> <p>20 published?</p> <p>21 A The Health Canada?</p> <p>22 Q Yes.</p> <p>23 A Fairly recently. Can't quote you the</p> <p>24 date.</p>
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<p>1 manuscript that was recently published; correct?</p> <p>2 A I believe I saw the pre-print and then</p> <p>3 the copy of the actual published paper. And, of</p> <p>4 course, his expert report.</p> <p>5 Q When did you first see Dr. Saed's</p> <p>6 manuscript?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Preprint or published?</p> <p>10 MS. THOMPSON:</p> <p>11 Q Either.</p> <p>12 A So I think the preprint came first,</p> <p>13 obviously. The expert report was available</p> <p>14 first, and then the preprint, and then just</p> <p>15 within, I think, a month and a half I got the</p> <p>16 paper. It was pretty recent.</p> <p>17 Q Is Dr. Saenz's published manuscript on</p> <p>18 your supplemental materials list?</p> <p>19 MS. CURRY:</p> <p>20 It's attached to the objections, which</p> <p>21 is Exhibit 3.</p> <p>22 MS. THOMPSON:</p> <p>23 Yeah. I -- I couldn't find my notice</p> <p>24 with objections.</p>	<p>1 Q If it was December, would that surprise</p> <p>2 you?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A December of --</p> <p>6 MS. THOMPSON:</p> <p>7 Q Of '18?</p> <p>8 A That's pretty recent.</p> <p>9 Q Were you not aware that this had been</p> <p>10 put online by Health Canada prior to Dr. Saenz's</p> <p>11 deposition?</p> <p>12 A I was not.</p> <p>13 Q Did you review that 2014 letter from</p> <p>14 FDA in response to a public citizen complaint?</p> <p>15 A I am familiar with that.</p> <p>16 (DEPOSITION EXHIBIT NUMBER 5</p> <p>17 WAS MARKED FOR IDENTIFICATION.)</p> <p>18 MS. THOMPSON:</p> <p>19 Q And I'll mark that 2014 public citizen</p> <p>20 response letter from the FDA as Exhibit Number 5.</p> <p>21 Does that look like the letter that you</p> <p>22 reviewed, Dr. Birrer?</p> <p>23 A (Nods affirmatively.) I've seen that,</p> <p>24 yeah.</p>

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<p>1 Q And did you review the IARC Monograph 2 on Nonasbestiform Talc from 2010? 3 A I did. 4 Q And that will be Exhibit Number 6. 5 (DEPOSITION EXHIBIT NUMBER 6 6 WAS MARKED IDENTIFICATION.) 7 MS. THOMPSON: 8 Q Does that look like the document that 9 you reviewed? 10 A Yes. Yeah. I've seen that. Yep. 11 MS. THOMPSON: 12 Dawn, if you want more copies, I'm 13 happy to give -- 14 MS. CURRY: 15 I'm okay. I don't know if other 16 counsel need a copy to review. 17 MR. MIZGALA: 18 No. 19 MS. THOMPSON: 20 I think for most everything I have 21 another copy, so if there's anything you'd like 22 to see and not have to take home with you, I'm 23 happy to provide it. 24 MS. THOMPSON:</p>	<p>1 Q Okay. That's my question. 2 A Yes. 3 Q But it was published in December, and 4 you didn't look at it until you saw it in 5 Dr. Saenz's deposition as an exhibit; right? 6 A Correct. 7 Q Did you deem it important? 8 MS. CURRY: 9 Object to the form. 10 A Well, since it was quoted and my 11 impression was that there were people who thought 12 this was important, that necessitated me to take 13 a look at it. 14 MS. THOMPSON: 15 Q Did you think it was important? 16 MS. CURRY: 17 Object to the form. 18 A Well, after I read it, again, my sense 19 was it doesn't really sway me one more -- one way 20 or the other because they're -- they're 21 essentially re-reviewing all the data that we 22 know and coming to a different conclusion. I 23 just think they got it wrong, unfortunately. 24 MS. THOMPSON:</p>
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<p>1 Q Did you know that the Health Canada 2 assessment was made pub- -- made available to the 3 public? 4 A Yes. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Do you believe that the Health Canada 9 risk assessment is relevant to the topic today? 10 MS. CURRY: 11 Object to the form. 12 A It doesn't change my opinion about 13 biologic plausibility. It's a -- obviously, an 14 opinion that's based upon a lot of data that I 15 believe is reviewed by Taher, which is 16 information data that I already was aware of, so 17 it doesn't really sway me one way or the other. 18 MS. THOMPSON: 19 Q But my question was, did you deem it 20 relevant? 21 MS. CURRY: 22 Object to the form. 23 A Relevant to review. 24 MS. THOMPSON:</p>	<p>1 Q But you will agree that it did provide 2 an extensive review on the subject? 3 MS. CURRY: 4 Object to the form. 5 A It was, I thought, would be described 6 as extensive. 7 MS. THOMPSON: 8 Q Did you review the statement of the 9 methodology that accompanied the risk assessment? 10 A I went -- I looked through it. 11 Q I'll mark that as Exhibit 7. 12 (DEPOSITION EXHIBIT NUMBER 7 13 WAS MARKED IDENTIFICATION.) 14 MS. THOMPSON: 15 Q Is that what you saw? 16 A I didn't see it printed like this with 17 the color on it. Yeah. 18 Q And let's just look at page 2 of the 19 document titled "Weight of Evidence, General 20 Principles and Current Applications in Health 21 Canada." 22 Does number 3, Role in Risk 23 Assessments, generally outline the methodology 24 that Health Canada applied to this risk</p>

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<p>1 assessment?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Yeah. I think it's a summary of</p> <p>5 what -- of how they approached it. That's my</p> <p>6 sense. Yep.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And for the risk assessment, Health</p> <p>9 Canada assumed talc or talcum products to be</p> <p>10 nonasbestiform.</p> <p>11 Is that your understanding?</p> <p>12 A Yeah. I believe that's what they</p> <p>13 focused on.</p> <p>14 Q What does nonasbestiform mean?</p> <p>15 A I'm not going to go down the line of</p> <p>16 being an expert in asbestos.</p> <p>17 Q So do you not know what it means when</p> <p>18 the talc is considered nonasbestiform?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I'm assuming they're addressing sort of</p> <p>22 mineral characterization of these substances.</p> <p>23 But again, I -- that's not my area of expertise.</p> <p>24 I'm not a geologist and it -- it in many ways is</p>	<p>1 MS. THOMPSON:</p> <p>2 Q So you're agreeing it's irrelevant what</p> <p>3 form the particles are in when --</p> <p>4 A I'm saying we don't have any data.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 You have to let her get her --</p> <p>8 THE WITNESS:</p> <p>9 Okay.</p> <p>10 MS. CURRY:</p> <p>11 -- entire question out before you</p> <p>12 answer so that the court reporter can get</p> <p>13 everything down.</p> <p>14 MS. THOMPSON:</p> <p>15 Q No data isn't the same as irrelevant,</p> <p>16 and that's my question.</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A You know, again, I don't think I can</p> <p>20 answer that "yes" or "no."</p> <p>21 MS. THOMPSON:</p> <p>22 Q Is it important whether the substance</p> <p>23 in Johnson's baby powder and Shower to Shower is</p> <p>24 in a particulate form or in a fiber form?</p>
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<p>1 sort of irrelevant to looking at many of the</p> <p>2 studies which are just looking at talcum powder.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Does it not matter to you whether that</p> <p>5 talc is in a particle or fiber -- fiber form?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Well, I looked at, again, extensively</p> <p>9 all the data that was addressing whether talcum</p> <p>10 powder is a risk factor or plays a role in</p> <p>11 developing ovarian cancer. It is irrelevant in</p> <p>12 that setting whether there are components in</p> <p>13 there that go from asbestiform to heavy metals to</p> <p>14 fragrance. That data would be clear from those</p> <p>15 experiments, and they're not.</p> <p>16 MS. THOMPSON:</p> <p>17 Q So is the answer that -- is it</p> <p>18 irrelevant whether the particles are in a</p> <p>19 particulate form or in a fiber form?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Again, I -- that -- that experiment has</p> <p>23 not been done in the -- the -- in the -- in the</p> <p>24 data that I looked at.</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A I don't know.</p> <p>4 MS. THOMPSON:</p> <p>5 Q You don't know if it's important?</p> <p>6 A I don't know if it's important.</p> <p>7 Q Okay. And is part of the reason is</p> <p>8 because you're not an expert in asbestos?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Again, I wasn't asked to evaluate the</p> <p>12 role of asbestos in ovarian cancer. I have an</p> <p>13 opinion on that based upon some of the</p> <p>14 epidemiologic studies.</p> <p>15 But in terms of the compositional</p> <p>16 analysis of talcum powder, that is not within the</p> <p>17 area of my expertise, and the various forms of</p> <p>18 asbestos in talc in terms of mineralogy is not</p> <p>19 something that I've spent time on.</p> <p>20 But, as I pointed out before, the</p> <p>21 experiments that have been conducted address that</p> <p>22 issue, which is they're using talcum powder. If</p> <p>23 it's got a variety of substances in it, any one</p> <p>24 of which match and play a role in ovarian cancer,</p>

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Page 58	Page 60
<p>1 it would have been obvious from the data and it's</p> <p>2 not.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Is it your opinion that baby powder and</p> <p>5 Shower to Shower -- and you understand those are</p> <p>6 the two products that we're here to talk about</p> <p>7 today; right?</p> <p>8 A Yes. J & J products?</p> <p>9 Q Yes.</p> <p>10 Is it your opinion that those products</p> <p>11 have been proven safe?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A So there's no data that I know of that</p> <p>15 says they're not safe.</p> <p>16 MS. THOMPSON:</p> <p>17 Q That's different. Have they been</p> <p>18 proven safe?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Yes.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And what data do you have as the basis</p> <p>24 for that, that they have been proven safe?</p>	<p>1 has it been proven unsafe, so --</p> <p>2 MR. MIZGALA:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q -- I'll ask the question again.</p> <p>6 Have these products been proven safe in</p> <p>7 your mind?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Again, it is -- it is an issue about</p> <p>11 trying to prove a negative. The data is there</p> <p>12 are decades of use of this, this material,</p> <p>13 perineal dusting, with no evidence, no convincing</p> <p>14 evidence that it's unsafe. I conclude that it's</p> <p>15 a safe product.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Do you believe that the molecular data</p> <p>18 proves the product safe?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Can you define "molecular data"?</p> <p>22 MS. THOMPSON:</p> <p>23 Q The -- the studies that have been</p> <p>24 performed on talcum powder, do you believe they</p>
Page 59	Page 61
<p>1 A Again, years and years of usage with</p> <p>2 these experiments and biologic systems,</p> <p>3 epidemiologic data is basically not exposing or</p> <p>4 uncovering any definitive data that that they're</p> <p>5 unsafe.</p> <p>6 Q So you believe the epidemiological data</p> <p>7 proves the product safe?</p> <p>8 A I don't think it -- it proves that it's</p> <p>9 a risk factor.</p> <p>10 Q Is that --</p> <p>11 A You're asking -- you're asking me to</p> <p>12 prove a negative. I can't do that.</p> <p>13 Q So you're not -- you're unable to prove</p> <p>14 that it's safe because you can't prove a</p> <p>15 negative?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Is that what you're saying?</p> <p>20 A I get -- yeah. I think -- I think the</p> <p>21 issue in front of us is: Is it unsafe? And the</p> <p>22 answer to that is there's no data for it.</p> <p>23 Q Well, the issue is what I asked you.</p> <p>24 And my question was has it been proven safe, not</p>	<p>1 prove that the products are safe?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Just repeat that once more, please.</p> <p>5 MS. THOMPSON:</p> <p>6 Q The molecular studies that have been</p> <p>7 done on talcum powder, is it your opinion that</p> <p>8 they prove that the products are safe?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A So I refine that a bit because I don't</p> <p>12 really consider them molecular studies. They're</p> <p>13 biologic studies, and there's a difference.</p> <p>14 The biologic studies which I reviewed,</p> <p>15 which I think is the sum total that's out there,</p> <p>16 are completely unconvincing, unconvincing that</p> <p>17 talcum powder is a -- plays a role in the</p> <p>18 development of ovarian cancer.</p> <p>19 MS. THOMPSON:</p> <p>20 Q But my question was is it your belief</p> <p>21 that the biologic studies confirm that the</p> <p>22 product is safe?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

16 (Pages 58 to 61)

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<p>1 A Again, we're back sort of to that 2 negative. I -- I think if -- I don't think they 3 convince me at all that it's -- it's a risk or 4 that it has any biologic activity on the target 5 organ, which is the ovary. And then in the 6 context of decades of use, then I would conclude 7 that it's a safe product. 8 MS. THOMPSON: 9 Q And it's fine to say you can't 10 answer -- you can't answer the question. But I 11 need -- but I want to have an answer. 12 And that is: Is it your opinion that 13 the biologic studies show that the products are 14 safe? 15 MS. CURRY: 16 Object to the form. 17 A Yeah. I -- I think -- I think 18 certainly that -- I think we can say that the 19 biologic studies do not reveal any untoward 20 effects. It's not reliable. The experiments are 21 not reliable. And so in that context, it's a 22 safe product. 23 I mean, again, you're asking me for a 24 biologic experiment that proves something is</p>	<p>1 reviewing the assessment? 2 A I believe so, but let me just -- 3 MS. CURRY: 4 Do you have the marked Exhibit 4 there? 5 I don't think the witness actually has 6 the -- 7 Oh, I think it's in front of you here. 8 I'm just gonna grab these marked 9 exhibits for him. Thank you. 10 MS. THOMPSON: 11 I think his is the marked exhibit, 12 unless I -- 13 MS. CURRY: 14 Right. It was just in front of you. 15 MS. THOMPSON: 16 Oh, I -- yeah. 17 MS. CURRY: 18 He didn't have it. That's all. 19 MS. THOMPSON: 20 Sorry. 21 A Yeah, this -- okay. 22 Yeah. So they -- they essentially went 23 through it in that kind of algorithm. 24 MS. THOMPSON:</p>
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<p>1 safe. I don't even know how to conduct an 2 experiment like that. 3 MS. THOMPSON: 4 Q Okay. And again, you know, I can't 5 answer that -- your question -- 6 A It's okay? 7 Q -- is a fine answer. Yeah. 8 MS. CURRY: 9 Object to the form. 10 MS. THOMPSON: 11 Q Back to the weight of the evidence 12 document, it's your understanding that this is 13 the evaluation that Health Canada applied to -- 14 A That's this one? 15 Q Yeah. 16 -- to answering the -- the question of 17 whether talcum powder was a risk for the public 18 in Canada; correct? 19 MS. CURRY: 20 Object to the form. 21 A Correct. 22 MS. THOMPSON: 23 Q And they also applied a Bradford Hill 24 analysis? Is that your understanding from</p>	<p>1 Q I did not see any discussion in your 2 report of a methodology similar to this. Is that 3 right? 4 A Correct. 5 Q Did you perform a weight of the 6 evidence of the data in this case? 7 A So I approached the expert report based 8 upon my experience, both scientifically and 9 clinical. We do this -- we do this a lot, 10 actually, where we'll do a complete review of the 11 literature and then extract the information, 12 dissect it in terms of paper by paper. 13 As a scientist, we don't really weigh 14 studies in a quantitative way. We don't -- it's 15 really not like a meta-analysis where we're 16 saying, okay, this is -- this is this weight 17 versus that weight. 18 But -- but the gestalt is, if you will, 19 at the end of the day, we look at these studies 20 and say do we believe -- do we think that the 21 data and results are believable; do they -- do 22 they support the conclusions. And we do that 23 individually through all the studies. 24 And my expert report, I think, outlines</p>

17 (Pages 62 to 65)

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<p>1 that very clearly.</p> <p>2 So I guess the answer to your question</p> <p>3 is at the end of the day, the conclusion is that</p> <p>4 we don't think -- I don't think the data supports</p> <p>5 a biologic plausibility for talc versus -- talc</p> <p>6 and the -- as a role in the development of</p> <p>7 ovarian cancer. That's the sum total of all that</p> <p>8 analysis.</p> <p>9 Q Did you perform a Bradford Hill</p> <p>10 analysis, per se?</p> <p>11 A Not in the expert report. It's really</p> <p>12 focused on biologic plausibility. I'm aware of</p> <p>13 Bradford Hill. Prior depositions, we talked</p> <p>14 about the elements, and I feel like I -- I</p> <p>15 certainly understand those criteria.</p> <p>16 Q But at least in this report, you didn't</p> <p>17 apply the criteria to this subject?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A It's really focused on biologic</p> <p>21 plausibility, which, as you know, is one</p> <p>22 component of it.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Correct.</p>	<p>1 Q Is it a credible scientific</p> <p>2 organization?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A I -- I think, to be fair, they -- they</p> <p>6 recognize this as a group that is careful and is</p> <p>7 invested in this. I would say, though, that</p> <p>8 they're not, as an organization, completely free</p> <p>9 of -- because of the way they're structured with</p> <p>10 WHO, completely free of outside influence or</p> <p>11 politics. That's my sense.</p> <p>12 MS. THOMPSON:</p> <p>13 Q And by outside influence and politics,</p> <p>14 where would that be coming from?</p> <p>15 A From World Health Organization, which</p> <p>16 is their sort of supervising body.</p> <p>17 Q And is it your belief that the World</p> <p>18 Health Organization is politically biased or</p> <p>19 subject to influence from outside?</p> <p>20 A Well, I think it's an organization</p> <p>21 that, by its nature, is, you know, a compendium</p> <p>22 of countries and societies. And, so, it's --</p> <p>23 let's just say it's not necessarily as sort of</p> <p>24 independent as the Academy, National Academy.</p>
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<p>1 And you reviewed that IARC 2010</p> <p>2 document that we've marked as an exhibit; right.</p> <p>3 A This is when it was labeled as 2B;</p> <p>4 right?</p> <p>5 Q Yes.</p> <p>6 And -- and this -- well, this monograph</p> <p>7 was published in 2010; right?</p> <p>8 A Correct.</p> <p>9 Q Is it your understanding that it</p> <p>10 considered literature up to 2006? Correct?</p> <p>11 A Sounds about right, yes.</p> <p>12 Q What is IARC?</p> <p>13 A Well, it's an international agency for</p> <p>14 research on cancer. Part of what they -- their</p> <p>15 responsibility is is to look at environmental</p> <p>16 risks for -- and -- and to sort of attempt to</p> <p>17 quantify them, identify them and quantify them</p> <p>18 for the development of cancer.</p> <p>19 Q Is it generally thought to be a</p> <p>20 reputable scientific organization?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A How do you define "reputable"?</p> <p>24 MS. THOMPSON</p>	<p>1 Q And by that you mean the National</p> <p>2 Academy of Science and Medicine Engineering, now</p> <p>3 titled?</p> <p>4 A Yes.</p> <p>5 Q Okay. And I believe we talked about</p> <p>6 before this --</p> <p>7 A Uh-huh.</p> <p>8 Q -- this monograph applies to talc not</p> <p>9 containing asbestiform fibers, but that is not</p> <p>10 your area of expertise; correct?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Correct.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And you are aware that there's a</p> <p>16 different IARC monograph published in 2012 that</p> <p>17 would cover talc containing asbestos or talc</p> <p>18 containing asbestiform fibers; correct?</p> <p>19 A I don't think I've seen that.</p> <p>20 Q That would be 2012, the 100C. I</p> <p>21 believe it's on your --</p> <p>22 A Is it?</p> <p>23 Q -- reliance list.</p> <p>24 A Do you have a copy?</p>

18 (Pages 66 to 69)

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<p>1 Q Yeah. It's number 77.</p> <p>2 A 77.</p> <p>3 Q Arsenic, Metals, Fibers and Dust?</p> <p>4 A Oh, I think I -- I'm sorry. That's</p> <p>5 coming back to me. It was a small -- yeah.</p> <p>6 Q And did you -- did you review that IARC</p> <p>7 monograph?</p> <p>8 A Yeah. There was a -- what -- what</p> <p>9 I looked at was a subset of the entire document.</p> <p>10 Yeah.</p> <p>11 Q Did you look at the section with</p> <p>12 asbestos?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A I believe so, yeah.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Did you look at the section with heavy</p> <p>18 metals?</p> <p>19 A No.</p> <p>20 Q Are you aware that that document, 2012,</p> <p>21 100C, includes all forms of asbestos and talc</p> <p>22 containing asbestiform fibers?</p> <p>23 A That sounds correct.</p> <p>24 Q But you're not sure about that today?</p>	<p>1 Object to the form.</p> <p>2 A It's detailed.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Going to the FDA response letter, at</p> <p>5 least by volume, would you agree that this FDA</p> <p>6 letter is a less extensive review?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Less pages.</p> <p>10 MS. THOMPSON:</p> <p>11 Q That's kind of what I was getting at.</p> <p>12 How about references?</p> <p>13 A Yeah.</p> <p>14 Q So, essentially, the FDA response</p> <p>15 letter in 2014 does not include a description of</p> <p>16 the methodology or an extensive reference list.</p> <p>17 Is that fair --</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 MS. THOMPSON:</p> <p>21 Q -- statement?</p> <p>22 A Well, I -- again, I think a little bit</p> <p>23 you're comparing apples and oranges in the sense</p> <p>24 that the purpose for these documents is somewhat</p>
Page 71	Page 73
<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Well, as I said, I'm not a asbestos</p> <p>4 expert. But that -- that IARC volume is focused</p> <p>5 on fibers, so that makes sense.</p> <p>6 MS. THOMPSON:</p> <p>7 Q And have you reviewed the preamble to</p> <p>8 the IARC monographs? It's included in --</p> <p>9 A Yeah.</p> <p>10 Q -- in exhibit --</p> <p>11 A I looked through it.</p> <p>12 Q Okay.</p> <p>13 A It's voluminous.</p> <p>14 Q And does that describe the -- the</p> <p>15 methodology that IARC applies when it's looking</p> <p>16 to determine whether a substance is carcinogenic</p> <p>17 or not?</p> <p>18 A Yes. It's a list of all the</p> <p>19 participants, the general principles, the</p> <p>20 methodology.</p> <p>21 Q And you would agree, similar to Health</p> <p>22 Canada, that that methodology is extensive as</p> <p>23 well?</p> <p>24 MS. CURRY:</p>	<p>1 different in that this is a letter from the FDA</p> <p>2 in response to a -- I think it was a citizen's</p> <p>3 petition. They're not gonna give -- they're not</p> <p>4 gonna send this back to a citizen's petition</p> <p>5 because I think the citizen's petition would be</p> <p>6 insulted because they're not going to be able to</p> <p>7 read it. It's more of a letter than the -- what</p> <p>8 their opinion is.</p> <p>9 Oh. Sorry.</p> <p>10 Q And you're referring to that IARC --</p> <p>11 A Yeah.</p> <p>12 Q -- 2010 monograph. Yeah.</p> <p>13 A Yeah.</p> <p>14 Q Fair enough.</p> <p>15 However, you would consider the FDA a</p> <p>16 credible source?</p> <p>17 A Yes.</p> <p>18 Q Let's look at your CV. And you have</p> <p>19 been a prolific researcher. Would you agree?</p> <p>20 A I survive.</p> <p>21 Q I -- I think there are approximately</p> <p>22 400 published papers. Is that close?</p> <p>23 A Correct.</p> <p>24 Q You have a lot of coauthors on these</p>

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<p>1 papers. Am I right?</p> <p>2 A Correct.</p> <p>3 Q On some, you're the lead author;</p> <p>4 correct?</p> <p>5 A Correct.</p> <p>6 Q What does the role of lead author</p> <p>7 usually entail?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A So let me -- let me step back and</p> <p>11 define that. I would say anchor positions.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay.</p> <p>14 A So first author is usually the person</p> <p>15 who has done most of the work. And, it</p> <p>16 actually -- my first authorship positions have</p> <p>17 sort of faded with time because I take the other</p> <p>18 anchor position, which is the senior author,</p> <p>19 where you're providing guidance, mentorship, and</p> <p>20 then you -- you ultimately are responsible for</p> <p>21 the quality of the paper.</p> <p>22 Q And -- and that --</p> <p>23 A Yeah.</p> <p>24 Q -- that person is -- is often listed</p>	<p>1 A No. I think OCAC is a lot like that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q They're providing tissue samples or are</p> <p>4 they providing expertise?</p> <p>5 A Well, OCAC is the consortium, so</p> <p>6 it's -- it's composed of all of those</p> <p>7 institutions. And those institutions are</p> <p>8 providing specimens. And then the authors from</p> <p>9 those institutions end up on the paper.</p> <p>10 Q How are the authors of the consortium's</p> <p>11 publications selected?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Specific in GWAS or in general?</p> <p>15 MS. THOMPSON:</p> <p>16 Q In OCAC.</p> <p>17 A OCAC. Well, I'm not sure I can quote</p> <p>18 you OCAC rules, but the general guidelines would</p> <p>19 be that from every institution that participated,</p> <p>20 there'd be a primary author. If -- if there was</p> <p>21 somebody else at the institution who specifically</p> <p>22 did something important for that paper, they</p> <p>23 might take two authors. But usually there's a</p> <p>24 limit because you just -- OCAC, I believe, has --</p>
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<p>1 last. Is that right?</p> <p>2 A That's right.</p> <p>3 Q Okay. And can I assume that the</p> <p>4 authors in the middle have varying roles but all</p> <p>5 participate in the preparation of the manuscript</p> <p>6 in some sense?</p> <p>7 A Right. I mean, it becomes -- you</p> <p>8 probably can guess -- somewhat problematic when</p> <p>9 you look at GY studies when there are almost more</p> <p>10 authors than specimens. So the idea there is</p> <p>11 that the individuals in -- in between are still</p> <p>12 contributing to the paper. They're -- they may</p> <p>13 be providing specimens.</p> <p>14 Q And I believe in GWAS, the -- the</p> <p>15 recruitment for GWAS are researchers that can</p> <p>16 provide tissue specimens for the group that's</p> <p>17 analyzing them. Is that a fair --</p> <p>18 A It's a big point. It's -- it's a big</p> <p>19 part of it. Yeah.</p> <p>20 Q And you'd agree that that's different</p> <p>21 from the consortium that we discussed earlier,</p> <p>22 that OCAC consortium; right?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 I'm guessing -- 50 to maybe even 100</p> <p>2 institutions. So if you were to allow unlimited</p> <p>3 authors, it would be unmanageable.</p> <p>4 Q Would the authors typically be</p> <p>5 considered to have expertise in the particular</p> <p>6 area that they're publishing in?</p> <p>7 A Yes.</p> <p>8 Q Would they typically have previous</p> <p>9 scholarly work or publications?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Usually.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Would they typically have a -- a good</p> <p>15 reputation in the scientific or medical</p> <p>16 community?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I hope so.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Would they typically be knowledgeable</p> <p>22 in that respective field that they're called upon</p> <p>23 to contribute to the --</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Yeah. I mean, I think it would be</p> <p>3 very -- again, these GWAS studies -- I'm sorry --</p> <p>4 the GWAS studies are in some ways really unique</p> <p>5 in that there's so many authors. There may be</p> <p>6 individuals in that list who -- who while they're</p> <p>7 ovarian cancer researchers, they could be fairly</p> <p>8 junior, and they may have just provided some</p> <p>9 specimens. Yeah.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Yeah. And I'm not as interested in the</p> <p>12 GWAS because they do have, you know, a whole</p> <p>13 number.</p> <p>14 A Yeah.</p> <p>15 Q But I'm thinking more of the Australian</p> <p>16 consortium, the OCAC, the -- the other ones where</p> <p>17 it looks, at least by appearance, that you're --</p> <p>18 the authors are chosen because they're experts</p> <p>19 in -- in a particular area. For example,</p> <p>20 epidemiology. Would you agree with that</p> <p>21 statement?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A I think that's true -- I think that's</p>	<p>1 of careful thought.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And -- and I'd assume they'd be</p> <p>4 qualified in their area of expertise for the same</p> <p>5 reason, or else you wouldn't choose them. Right?</p> <p>6 A It would be hard for them to contribute</p> <p>7 in a meaningful way if they don't know what</p> <p>8 they're doing.</p> <p>9 Q Okay. Looking at your CV, are there</p> <p>10 any coauthors that you can identify that you</p> <p>11 would not regard as qualified in their respective</p> <p>12 fields?</p> <p>13 A I'm not gonna be able to answer that.</p> <p>14 I've got 400 publications and probably several</p> <p>15 thousand authors.</p> <p>16 Q So do you think there would be some</p> <p>17 that you could identify as not being credible?</p> <p>18 A Not that I know of.</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Again, this is realtime, so if we go</p> <p>22 back to my Ph.D., which was on the measles virus</p> <p>23 back when I was a young lad, I don't know that</p> <p>24 field anymore, and I don't know what those</p>
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<p>1 true as a -- as general guideline, yeah.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And would the same be true for a paper</p> <p>4 that you're publishing? Would you look for</p> <p>5 coauthors -- either as an anchor or a senior,</p> <p>6 would you look for coauthors that are credible?</p> <p>7 A Well, you know, when you do these</p> <p>8 experiments, you're not really out looking for</p> <p>9 authors. You're doing the experiments, and the</p> <p>10 people who do them, help you design a project,</p> <p>11 deserve authorship. Those are the guidelines.</p> <p>12 And if you're asking would I put</p> <p>13 somebody who I thought was not credible on an</p> <p>14 author list, I'd be very bothered by that. But</p> <p>15 you'd have to define what "credible" means.</p> <p>16 Q Yeah. So I guess rather than choosing</p> <p>17 someone as a coauthor, I should have rephrased</p> <p>18 that. Choosing someone to work on a project that</p> <p>19 would later be published, you can assume that</p> <p>20 person would be credible; correct?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Yeah. I choose my collaborators, like</p> <p>24 others, other scientists, with a certain amount</p>	<p>1 individuals have done.</p> <p>2 It's a realtime process. Sometimes</p> <p>3 individuals who seem to be very, very good</p> <p>4 scientists later on in life will get involved in</p> <p>5 scientific misconduct. That may not have been at</p> <p>6 all relevant for when you put that person on your</p> <p>7 paper.</p> <p>8 (DEPOSITION EXHIBIT NUMBER 8</p> <p>9 WAS MARKED IDENTIFICATION.)</p> <p>10 MS. THOMPSON:</p> <p>11 Q I'm gonna just give you a list of some</p> <p>12 coauthors that I pulled off your CV. And would</p> <p>13 you look at that list?</p> <p>14 A Uh-huh.</p> <p>15 Q I narrowed it down from a couple</p> <p>16 thousand to a more manageable number. Are there</p> <p>17 any names on that list that you could identify as</p> <p>18 not being credible?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And that list is marked as Exhibit --</p> <p>23 Dr. Birrer, can you --</p> <p>24 A 8.</p>

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<p>1 Q -- 8.</p> <p>2 A So I would say of this list,</p> <p>3 probably -- I'm estimating -- about 20 percent of</p> <p>4 these people, I'm -- I'm not sure I quite</p> <p>5 remember what paper they're on. But the rest of</p> <p>6 them I know because they're high profile. I</p> <p>7 don't see anybody here that I would say is not a</p> <p>8 good scientist.</p> <p>9 Q And qualified in their respective</p> <p>10 areas?</p> <p>11 A Yes.</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And some -- at least some on the list</p> <p>16 you published with multiple times. Is that fair</p> <p>17 to say?</p> <p>18 A Yeah.</p> <p>19 Q Dr. Birrer, throughout your report you,</p> <p>20 at least at times, used the term "talc." What</p> <p>21 are you referring to when you say talc?</p> <p>22 A So there's two levels of relevance</p> <p>23 here. One is for epidemiologic studies or</p> <p>24 studies that were -- that were conducted. A</p>	<p>1 sense is they command the market. But I'm not --</p> <p>2 I'm not in the supermarket a lot.</p> <p>3 Q And not in the baby powder section?</p> <p>4 A No.</p> <p>5 Q And what is contained in the</p> <p>6 Johnson's -- in Johnson's baby powder, to your</p> <p>7 understanding?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Talc. And I know that's an issue</p> <p>11 that's come up in terms of are there other</p> <p>12 things. I mean, clearly there are other things</p> <p>13 that -- the product smells nice, so there must be</p> <p>14 some fragrance.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Okay.</p> <p>17 A But I don't know of any -- first of</p> <p>18 all, I don't -- that's not my area of expertise.</p> <p>19 I've certainly never conducted any experiments</p> <p>20 and tried to figure out what's in it and -- and</p> <p>21 wouldn't consider myself an expert in the whole</p> <p>22 mineralogy issue.</p> <p>23 Q So that would be talc, the mineral. Do</p> <p>24 you have an opinion as to whether there is a such</p>
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<p>1 subset of the -- of the studies that were</p> <p>2 conducted in the lab were actually dealing with</p> <p>3 talcum powder.</p> <p>4 But there are experiments in particular</p> <p>5 where individuals are using sigma-produced talc.</p> <p>6 So it's -- it's -- it's a bit of a mixture. But</p> <p>7 I think, in particular in the epi studies, a lot</p> <p>8 of them are just okay to use powder.</p> <p>9 Q So to -- to the extent both of us can,</p> <p>10 we can try to say whether we're referring to</p> <p>11 talcum powder or talc, as you described, so</p> <p>12 let's -- let's both try to do that, to the extent</p> <p>13 possible, because it can get confusing.</p> <p>14 A I completely concur.</p> <p>15 Q Okay. Okay. I'm glad we agree on</p> <p>16 that.</p> <p>17 Do you know what Johnson & Johnson's</p> <p>18 market share of the talcum powder product has</p> <p>19 been over the years?</p> <p>20 A I don't.</p> <p>21 Q If I told you it was 60 to 70 percent,</p> <p>22 would you have any basis to disagree with that</p> <p>23 number?</p> <p>24 A I actually wouldn't, because I -- my</p>	<p>1 thing as pure talc?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A You know, my -- you know, my sense is</p> <p>5 in that some of the experiments where this</p> <p>6 product is actually bought not cosmetically, but</p> <p>7 I've seen references to sigma-produced talc, that</p> <p>8 that's a -- that's a purified form of it.</p> <p>9 MS. THOMPSON:</p> <p>10 Q And, so, by pure -- purified form, you</p> <p>11 would mean that it does not con- -- contain</p> <p>12 impurities; correct?</p> <p>13 A It would not contain something else.</p> <p>14 Q Would you consider it pure if it</p> <p>15 contained talc fibers?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A I don't -- I don't think I can answer</p> <p>19 that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q So no opinion on -- on that issue.</p> <p>22 A Yeah.</p> <p>23 Q Are you familiar with the various</p> <p>24 grades of talc?</p>

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<p style="text-align: right;">Page 86</p> <p>1 A No.</p> <p>2 Q Do you have any knowledge regarding the</p> <p>3 particle size of Johnson's baby powder or Shower</p> <p>4 to Shower?</p> <p>5 A Again, that's a little bit outside my</p> <p>6 area of expertise. My understanding is, you</p> <p>7 know, talc ranges from 10 microns to larger</p> <p>8 sizes. But it's not something I systematically</p> <p>9 explored. Even the expert reports here that</p> <p>10 focused on the mineralogy, I looked at it but not</p> <p>11 in any great detail.</p> <p>12 Q And if you were told that there are</p> <p>13 also smaller particles than 10 microns, that</p> <p>14 wouldn't surprise you?</p> <p>15 A I think there's a range.</p> <p>16 Q Fair enough.</p> <p>17 A I don't know how -- you know, again, I</p> <p>18 know there's references to ultrafine, et cetera,</p> <p>19 et cetera. I don't have definitive knowledge or</p> <p>20 data that that is true.</p> <p>21 Q Okay. But, as far as you know, the</p> <p>22 particle size is -- is mixed?</p> <p>23 A Uh-huh.</p> <p>24 Q It's not a standard size like you might</p>	<p style="text-align: right;">Page 88</p> <p>1 Q It was the -- it was a report that</p> <p>2 addressed the fragrance chemicals in talcum</p> <p>3 powder. Do you remember seeing that? I don't</p> <p>4 remember whether it's on your list. Oh.</p> <p>5 A Is that plaintiff?</p> <p>6 Q You don't have Dr. Crowley's report.</p> <p>7 A Yeah.</p> <p>8 Q Did you know if there was a -- an</p> <p>9 expert report that specifically addressed the</p> <p>10 fragrance -- fragrance chemical presence in baby</p> <p>11 powder?</p> <p>12 A Not that I know of.</p> <p>13 Q So I -- I can assume that you don't</p> <p>14 know why you weren't provided Dr. Crowley's</p> <p>15 report?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A It's not on my list.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Did you ask if anyone had looked at the</p> <p>21 actual chemicals in baby powder?</p> <p>22 A I didn't specifically go through that,</p> <p>23 no.</p> <p>24 Q It -- is it important for you to know</p>
<p style="text-align: right;">Page 87</p> <p>1 see, for example, in a pleurodesis talc?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A I don't -- I can't say that.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Okay.</p> <p>7 A But based on my rudimentary</p> <p>8 understanding of mineralogy here, that there's a</p> <p>9 range.</p> <p>10 Q Have you ever looked at the label on a</p> <p>11 bottle of baby powder?</p> <p>12 A I don't recall that.</p> <p>13 Q So you don't know what would be listed</p> <p>14 on the label?</p> <p>15 A No.</p> <p>16 Q But you're assuming it has some kind of</p> <p>17 fragrances in it?</p> <p>18 A I think that's a safe assumption. I</p> <p>19 have smelled it.</p> <p>20 Q Haven't we all.</p> <p>21 Did you read Dr. Crowley's report?</p> <p>22 Do you remember Dr. Crowley's report?</p> <p>23 A That's not coming to mind. Can -- do</p> <p>24 you have it?</p>	<p style="text-align: right;">Page 89</p> <p>1 the quality of talcum powder?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A And how do you define "quality"?</p> <p>5 MS. THOMPSON:</p> <p>6 Q I -- I define "quality" as the absence</p> <p>7 of the amount and types of impurities.</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A How do you define "impurities"?</p> <p>11 MS. THOMPSON:</p> <p>12 Q Something that's not pure talc.</p> <p>13 A Okay. Again, I -- I'll come back to</p> <p>14 this theme. I think -- I didn't go down that</p> <p>15 road. It's not my area of expertise. But, more</p> <p>16 importantly, I was asked to sort of review the</p> <p>17 total data that suggested there might be a role</p> <p>18 for talc in ovarian cancer, regard- -- talcum</p> <p>19 powder, regardless of what's in it.</p> <p>20 So in that context, impurities,</p> <p>21 fragrance, heavy metals, it doesn't matter. We</p> <p>22 would see the data. So I felt pretty comfortable</p> <p>23 that that's the -- that's the important theme for</p> <p>24 my job.</p>

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<p>1 Q Is it important for you to know the 2 min- -- mineral content of a talcum powder 3 product if you are intending to assess its 4 potential health effects? 5 MS. CURRY: 6 Object to the form. 7 A Would you just repeat that, please? 8 MS. THOMPSON: 9 Q Is it important to know the mineral 10 content of a talcum powder product if you are 11 intending to assess its potential health effects? 12 MS. CURRY: 13 Object to the form. 14 A You know, again, I think in terms of 15 reviewing the literature, no. I mean, it's 16 talcum and it's talcum powder. It's a 17 representative of what's on the market. 18 So regardless of what's there or not, 19 even from a mineral standpoint, we can make a 20 judgment as to whether that's providing data that 21 supports whether it's a risk factor or biologic 22 plausibility for a role in development of ovarian 23 cancer. 24 MS. THOMPSON:</p>	<p>1 MS. THOMPSON: 2 Q For a potential health effect. 3 MS. CURRY: 4 Object to the form. 5 A There's no data for that. I can't 6 develop a mechanism when, in fact, there's no 7 biologic plausibility for talcum powder in a role 8 of ovarian cancer. 9 MS. THOMPSON: 10 Q Well, it sounds like what you're saying 11 is if you decide that talcum powder doesn't cause 12 ovarian cancer, then there's no reason to even 13 look at whether there's a plausible mechanism or 14 not. 15 MS. CURRY: 16 Object to the form. 17 MS. THOMPSON: 18 Q Is that -- 19 A Well, I'm not sure what mechanism we're 20 looking at. We're looking at a mechanism that an 21 agent doesn't cause cancer? That does -- makes 22 no sense to me. 23 Q We're looking at what a mechanism could 24 be if it could cause cancer, as a hypothetical.</p>
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<p>1 Q So even in your determination of 2 whether a biologic mechanism is plausible or not, 3 it doesn't matter what the mineral content of the 4 baby powder is? 5 MS. CURRY: 6 Object to the form. 7 A As long as that baby powder's been 8 tested in that experiment, it doesn't matter. 9 MS. THOMPSON: 10 Q And that goes for whether the baby 11 powder contains asbestos? 12 A Well, again, I -- I think if it 13 contained asbestos, that would show a signal in 14 those experiments. Now, we would see it. We may 15 not know it's related to asbestos, fragrance or 16 whatever, but the experiments would be 17 reproducible and dispositive. And in my 18 experience, they're not. 19 Q But the question is, does that -- would 20 that explain a mechanism if there's asbestos in 21 the baby powder? 22 MS. CURRY: 23 Object to the form. 24 A Mechanism for what?</p>	<p>1 MS. CURRY: 2 Object to the form. 3 A No. I -- a mechanism for a 4 hypothetical. I -- you know, again, that -- we 5 don't need the hypothetical. We've tested talcum 6 in those experiments. There's no data to support 7 biologic plausibility. So why are -- why would 8 we be trying to think about a hypothetical 9 component to produce a mechanism for a biologic 10 activity that we haven't seen? 11 MS. THOMPSON: 12 Q What experiments are you referring to? 13 A I would say primarily the ones that are 14 in my expert report. That really is a sum- -- 15 Q Which experiments in your report? We 16 can go through your report if you want. 17 A I'm -- yeah. 18 Q I'm looking for the experiments that 19 show that there's no biologic effect. 20 A So Buz'Zard is one that frequently -- 21 Q And is it your opinion that Buz'Zard 22 shows no biologic effect? 23 A There's nothing in that paper that's 24 reliable in terms of showing biologic</p>

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<p>1 plausibility.</p> <p>2 Q And we'll get to the others.</p> <p>3 So you're referring to --</p> <p>4 A Yes.</p> <p>5 Q -- Buz'Zard, Shukla?</p> <p>6 A Shukla. Just hang on. Yeah.</p> <p>7 Buz'Zard, Shukla and Hamilton.</p> <p>8 Q And I'm going to assume you include</p> <p>9 Dr. Saed in that?</p> <p>10 A Correct.</p> <p>11 Q Although we're going to get into more</p> <p>12 detail in that later.</p> <p>13 A Exactly.</p> <p>14 Q And you're aware of the other animal</p> <p>15 studies that show inflammatory effects; right?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A You have to go through those and define</p> <p>19 that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay.</p> <p>22 A Because it's pretty broad literature.</p> <p>23 You're assuming -- you're referring to</p> <p>24 Keskin?</p>	<p>1 What is your understanding of how these</p> <p>2 products are used by women?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Baby powder?</p> <p>6 MS. THOMPSON:</p> <p>7 Q And -- and we're talking about, at</p> <p>8 least for these cases, in the perineal area.</p> <p>9 A Yeah.</p> <p>10 Q Do you have any knowledge from</p> <p>11 conversations with women or literature or any</p> <p>12 other source as to how it's applied, whether it's</p> <p>13 standing, lying down, in the underwear, on a</p> <p>14 sanitary napkin, shaken into hands? Did you have</p> <p>15 any understanding of -- of those issues?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A I would say not a systematic, shall we</p> <p>19 say, meta-analysis of baby powder use. I</p> <p>20 certainly, over years in the clinic, am familiar</p> <p>21 with women who use baby powder. You know, my</p> <p>22 sense is that most dust the perineum usually</p> <p>23 standing up. I -- but again, I can't say that's</p> <p>24 a scientific evaluation. I have some experience</p>
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<p>1 Q There are studies going back to the</p> <p>2 '40s and '50s with intraperitoneal inflammatory</p> <p>3 effects with -- in the presence of talc.</p> <p>4 You're aware of those?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A There is a big literature.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And understanding that there are</p> <p>10 different histologic subtypes of epithelial</p> <p>11 ovarian cancer, can we agree that if one of us</p> <p>12 refers to ovarian cancer in a general sense, that</p> <p>13 we're referring to epithelial ovarian cancer?</p> <p>14 A I would not include germ -- you know,</p> <p>15 germ cell tumors in this.</p> <p>16 Q Stromal -- we're excluding stromal --</p> <p>17 A And stromal, yeah. It's epithelial,</p> <p>18 correct.</p> <p>19 Q Okay. So we're on the same page there?</p> <p>20 A With -- with the caveat being, and we</p> <p>21 do discuss this in the report about -- even</p> <p>22 within the epithelial component, we now realize</p> <p>23 there are different types of tumors.</p> <p>24 Q Understood.</p>	<p>1 with my wife. So I -- I -- it's a certain --</p> <p>2 some general concept of how it's done, yeah.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Would you agree, at least, that, for</p> <p>5 most women, it would be applied in a -- in a</p> <p>6 habitual manner?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Yeah, I think it's important to define</p> <p>10 that. It would certainly be repetitive. Is it</p> <p>11 something -- you know, habitual sounds to me</p> <p>12 like -- almost like an addict. And I don't -- I</p> <p>13 don't think that's the case.</p> <p>14 MS. THOMPSON:</p> <p>15 Q No. I didn't mean it -- mean in that</p> <p>16 term.</p> <p>17 I meant that it's -- and this has been</p> <p>18 reported in the literature, I believe you're</p> <p>19 aware --</p> <p>20 A Uh-huh.</p> <p>21 Q -- that most women do it the same way</p> <p>22 every day or whatever schedule they're on.</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 A I would think that there'd be some 2 consistency on that. I -- I will say this 3 parenthetically, you may get to it later on, but 4 I do think, based on what we're just discussing, 5 it's very hard to -- it's very hard to quantify 6 amount of use. I really do. 7 MS. THOMPSON: 8 Q And I think we will get to that. 9 A Okay. 10 Q But -- but -- so it's hard to quantify 11 how much a woman is using on any given 12 application; correct? 13 A (Nods affirmatively.) 14 Q And it's hard -- 15 MS. CURRY: 16 You have to say "yes" or "no" versus 17 head shakes because the court reporter will not 18 be able to get that down. 19 A It says "nods affirmatively." 20 Yes. 21 MS. CURRY: 22 She was able to in that instance. I 23 stand corrected, but for -- 24 THE WITNESS:</p>	<p>1 be true for a number of environmental 2 exposures -- 3 MS. CURRY: 4 Object to the form. 5 MS. THOMPSON: 6 Q -- that difficulty in quantifying how 7 much a particular individual is exposed to? 8 A Well, you'd have to give me some 9 examples on that. I mean, I think for cigarette 10 smoke, it actually is quite quantifiable. 11 Q Cigarette smoke, I agree. 12 How about a household or domestic 13 exposure to asbestos, for example? 14 A I guess you could quantify the amount 15 of asbestos-containing material in the house, 16 but -- 17 Q How about a spouse coming home from 18 occupational exposure? 19 A Yeah. It would be a challenge. 20 Q How about chemicals in water source? 21 A That should be measurable. 22 Q Over time? 23 A Multiple samples. 24 Q How about --</p>
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<p>1 She's very good. 2 MS. THOMPSON: 3 Q And -- and if there were talc that 4 reached the vagina or the upper genital tract, it 5 would be hard to quantify how much that would be; 6 right? 7 A Yes. 8 Q But you'll have to agree, but -- that 9 not being able to quantify it isn't a reason not 10 to study the issue. Right? 11 MS. CURRY: 12 Object to the form. 13 A I think that's a fair statement in 14 that, you know, if it's important, you need to do 15 it. I just think that, for the reasons you just 16 said, quantifying it is -- is difficult, not only 17 in individual applications, how much actually 18 would get where, but this longitudinal issue. 19 While I think there's some consistency, do women 20 use it for a while and then stop using it and how 21 often do they change? I think there's a whole 22 issue on that, too. 23 MS. THOMPSON: 24 Q And wouldn't you agree that that would</p>	<p>1 A And -- and potentially even the 2 patient. 3 Q How about exposure to a pesticide? 4 A Yeah. That would be more of a 5 challenge. Yeah. 6 Q So there's certainly other -- 7 A Some variability. 8 Q -- other situations where it's 9 challenging to quantify the exposure to an 10 individual over time. 11 MS. CURRY: 12 Object to the form. 13 A Yes. 14 MS. THOMPSON: 15 Q Other than a literature or document 16 review, you -- I think I asked you this before 17 but I'm gonna just ask it again since it's in my 18 outline here. 19 Other than a literature and document 20 review, have you done any research on talcum 21 powder and ovarian cancer? 22 A No. 23 Q And that would include in vitro 24 research and in vivo; correct?</p>

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<p>1 A Correct.</p> <p>2 Q And you've never published an article</p> <p>3 on talcum powder and ovarian cancer. Is that</p> <p>4 correct?</p> <p>5 A No.</p> <p>6 Q Have you ever given a talk on talcum</p> <p>7 powder and ovarian cancer?</p> <p>8 A No.</p> <p>9 Q Have you discussed your opinions in</p> <p>10 this case with anyone?</p> <p>11 A No, other than counsel.</p> <p>12 Q No colleagues?</p> <p>13 A No.</p> <p>14 Q Did you attend the recent SGO</p> <p>15 conference in Hawaii?</p> <p>16 A Hawaii's a nice place. I did.</p> <p>17 Q Did you discuss talcum powder with any</p> <p>18 of your colleagues at the meeting?</p> <p>19 A I'd never been there before.</p> <p>20 I did not.</p> <p>21 Q Do you know Liz Swisher?</p> <p>22 A I do know Liz, yes.</p> <p>23 Q Do you know her from professional</p> <p>24 meetings and other interactions?</p>	<p>1 Q Do you know why she's no longer an</p> <p>2 expert?</p> <p>3 A I don't.</p> <p>4 Q Do you know Dr. Huh?</p> <p>5 A I do know Dr. Huh. Warner. Uh-huh.</p> <p>6 Q Do you know why Dr. Huh is not serving</p> <p>7 as an expert for the defendants in the MDL?</p> <p>8 A No.</p> <p>9 Q Does University of Alabama know that</p> <p>10 you are serving as a paid expert for</p> <p>11 Johnson & Johnson --</p> <p>12 A Yes.</p> <p>13 Q -- in this case?</p> <p>14 Do you know how much money</p> <p>15 Johnson & Johnson has contributed to the</p> <p>16 University of Alabama and your lab?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I --</p> <p>20 MS. THOMPSON:</p> <p>21 Q Let me rephrase that question because I</p> <p>22 don't like being "contributed."</p> <p>23 Do you know how much money</p> <p>24 Johnson & Johnson has paid to University of</p>
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<p>1 A I know her professionally and we're on</p> <p>2 several papers together.</p> <p>3 Q Yes, you are.</p> <p>4 A Yeah.</p> <p>5 Q Have you discussed the case with</p> <p>6 Dr. Swisher?</p> <p>7 A Not that I can recall.</p> <p>8 Q Were you aware that she was originally</p> <p>9 disclosed as an expert for the defendants?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A I think her name did -- was sort of</p> <p>13 mentioned to me, but --</p> <p>14 MS. CURRY:</p> <p>15 And please don't reveal any discussions</p> <p>16 or --</p> <p>17 THE WITNESS:</p> <p>18 Okay.</p> <p>19 MS. CURRY:</p> <p>20 -- communications that you've had with</p> <p>21 lawyers.</p> <p>22 THE WITNESS:</p> <p>23 Yes, counsel.</p> <p>24 MS. THOMPSON:</p>	<p>1 Alabama?</p> <p>2 A No.</p> <p>3 Q Do you know how much money</p> <p>4 Johnson & Johnson has paid to support your lab?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A None.</p> <p>8 MS. CURRY:</p> <p>9 We've been going over an hour and a</p> <p>10 half. Whenever it's a good breaking point for</p> <p>11 you.</p> <p>12 MS. THOMPSON:</p> <p>13 I think maybe less than five minutes --</p> <p>14 MS. CURRY:</p> <p>15 No problem.</p> <p>16 MS. THOMPSON:</p> <p>17 -- and it's a great break time.</p> <p>18 A I may be in kidney failure soon.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Can you make five minutes?</p> <p>21 A Yeah, I can. Yeah.</p> <p>22 Q We'll -- we'll --</p> <p>23 A Sure.</p> <p>24 Q -- be in the same boat there, so we</p>

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<p>1 can --</p> <p>2 A Boat's not a good choice.</p> <p>3 Q Yeah. I should have used a different</p> <p>4 word there.</p> <p>5 We talked about the methodology that</p> <p>6 you applied, but -- but it's not included, per</p> <p>7 se, in the report.</p> <p>8 Can you refer to me -- me to any</p> <p>9 published article, textbook chapter, anything</p> <p>10 that actually describes Dr. Birrer's methodology?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A No. Again, I -- I think this relates</p> <p>14 to what a lot of us in the field on my level do</p> <p>15 routinely, and so it's not really defined. But</p> <p>16 when we review literature, a topic, I wouldn't</p> <p>17 want to -- I don't want to call it a</p> <p>18 meta-analysis because that's a formal process.</p> <p>19 But we -- we -- we do the right -- we do the same</p> <p>20 thing. If we do it right, then it's</p> <p>21 comprehensive and then we make opinions on those</p> <p>22 papers. That's the methodology.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay.</p>	<p>1 MS. THOMPSON:</p> <p>2 Q How about what is sometimes used in the</p> <p>3 literature, elongated mineral fibers? Does that</p> <p>4 sound familiar?</p> <p>5 A It sounds consistent with some of the</p> <p>6 things I read, but I certainly did not pursue</p> <p>7 that sort of mineralogy review.</p> <p>8 Q So no comprehensive review on what's</p> <p>9 called EMP sometimes.</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A No.</p> <p>13 MS. THOMPSON:</p> <p>14 Q And I can assume that you didn't do a</p> <p>15 comprehensive review on heavy metals --</p> <p>16 A Correct.</p> <p>17 Q -- and ovarian cancer?</p> <p>18 A Yes.</p> <p>19 Q Or fragrance chemicals and ovarian</p> <p>20 cancer?</p> <p>21 A Correct.</p> <p>22 Q Do you agree that scientists can look</p> <p>23 at the same body of literature and reach</p> <p>24 different conclusions, in a general sense?</p>
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<p>1 A It's more of a scientific lab-based</p> <p>2 approach.</p> <p>3 Q Okay. And did you apply the same</p> <p>4 standards for this report that you would use if</p> <p>5 you were publishing a paper, for example, a</p> <p>6 review article like we discussed before?</p> <p>7 A I think so, yes.</p> <p>8 Q Would you be willing to have the</p> <p>9 opinions that you've provided in this report</p> <p>10 peer-reviewed if that were appropriate?</p> <p>11 A Essentially, yes. Yeah. Yeah.</p> <p>12 Q And I think we've discussed this, but</p> <p>13 does -- in your opinion, you performed a</p> <p>14 comprehensive literature review on the subject of</p> <p>15 talc and ovarian cancer; correct?</p> <p>16 A Correct.</p> <p>17 Q But am I correct to say that you did</p> <p>18 not perform the same comprehensive literature</p> <p>19 review for asbestos and ovarian cancer?</p> <p>20 A Correct.</p> <p>21 Q Fibrous talc in ovarian cancer?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Didn't use that term.</p>	<p>1 A You know, again, I think if the body</p> <p>2 of -- of data and literature is substantive and</p> <p>3 clear, I think that a reasonable scientist, a</p> <p>4 competent scientist will come to the same</p> <p>5 conclusion.</p> <p>6 Q So is it your opinion that a scientist</p> <p>7 who looks at the baby powder literature or talcum</p> <p>8 powder literature and concludes something</p> <p>9 different from you is unreasonable and</p> <p>10 incompetent?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I -- I would say they got it wrong.</p> <p>14 MS. THOMPSON:</p> <p>15 Q They got it wrong. But what about</p> <p>16 unreasonable?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I don't -- I wouldn't use that term. I</p> <p>20 would say that they looked at the data and</p> <p>21 misinterpreted it.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And would you say the same about their</p> <p>24 competence?</p>

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<p style="text-align: right;">Page 110</p> <p>1 MS. CURRY: 2 Object to the form. 3 A I think -- you know, labeling that as 4 incompetent is not appropriate. 5 MS. THOMPSON: 6 Q Well, you said, I think that a 7 reasonable scientist, competent scientist will 8 come to the same conclusion. Wouldn't that imply 9 that if they come to a different inclusion -- 10 conclusion, that they're unreasonable or 11 incompetent? 12 A Well, I think I prefaced that with if 13 the body of science we're looking at is -- is -- 14 it's convincing and strong and reproducible, that 15 reasonable scientists will come to the same 16 conclusion. 17 When the data is really unconvincing, 18 which is what we're dealing with here -- this 19 data is not convincing -- there's no data for 20 talc being involved in ovarian cancer, then you 21 get this disparate opinions. And -- and they've 22 got it wrong. And I made the -- 23 Q They've got it -- sorry. 24 A And I've made the argument why I got it</p>	<p style="text-align: right;">Page 112</p> <p>1 A Okay. 2 MS. CURRY: 3 Can we take a break? 4 A It looks like you're coming to an end. 5 MS. THOMPSON: 6 Q We are. Well, not the end of the day. 7 The end of the section. 8 A Hope springs eternal. 9 Q Wishful thinking. 10 One -- one more question, then we're 11 done. 12 A Sure. 13 Q What does "proof" mean to you? 14 MS. CURRY: 15 Object to the form. 16 MS. THOMPSON: 17 Q In a scientific sense. 18 A That would be evidence to support the 19 conclusion. 20 Q To convincingly support the conclusion? 21 MS. CURRY: 22 Object to the form. 23 A I'm not sure I need that adjective 24 there.</p>
<p style="text-align: right;">Page 111</p> <p>1 right. 2 Q Okay. They've got it wrong? 3 A Uh-huh. 4 Q You have it right. 5 A Uh-huh. 6 Q But I'm trying to find -- figure out 7 how you think they got it wrong. Were they 8 misinformed? 9 MS. CURRY: 10 Object to the form. 11 A They misinterpreted the data. 12 MS. THOMPSON: 13 Q They misinterpreted the data. 14 A Yeah. 15 Q And you would say they misinterpreted 16 the data even though they interpreted the data in 17 the same way that the authors presenting the data 18 pre- -- interpreted it? 19 MS. CURRY: 20 Object to the form. 21 A We'd have to go through the actual 22 paper you're referring to. 23 MS. THOMPSON: 24 Q Okay. We may go through some of those.</p>	<p style="text-align: right;">Page 113</p> <p>1 MS. THOMPSON: 2 Q Well, support -- support equals proof? 3 A Support couldn't equal proof. Proof is 4 a general term. So it's gonna be a spectrum. 5 Q 100 percent? 6 A Are you -- you know, definitive proof 7 would be definitive. 8 Q Okay. Let's take a break. 9 VIDEOGRAPHER: 10 Off the record at 10:44 a.m. 11 (OFF THE RECORD.) 12 VIDEOGRAPHER: 13 We're back on the record at 11 a.m. 14 MS. THOMPSON: 15 Q Dr. Birrer, I want to give you a series 16 of statements and have you agree or disagree or, 17 if you don't know or don't have an opinion, 18 that's fine, too. And -- and if you do have a 19 comment or explanation, you're welcome to provide 20 that, too, after you -- do you have a pen? You 21 can mark on this exhibit as we go through. This 22 is Exhibit 9. 23 (DEPOSITION EXHIBIT NUMBER 9 24 WAS MARKED FOR IDENTIFICATION.)</p>

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<p style="text-align: right;">Page 114</p> <p>1 MS. CURRY: 2 Can I just state an objection on the 3 record to the creation of this exhibit without 4 knowing the background of where the statements 5 are coming from. 6 MS. GARBER: 7 I don't think we're going to have 8 speaking objections here today, Miss Curry. The 9 proper objection is "Objection. Form." Do not 10 coach the witness, please. 11 MS. CURRY: 12 Miss Garber, I'm not coaching the 13 witness. 14 MS. GARBER: 15 You are coaching the witness. You know 16 you're coaching the witness. 17 MS. THOMPSON: 18 I'm asking a statement. It doesn't 19 matter where it's coming from. It's from my 20 head. 21 MR. MIZGALA: 22 Do you have extra copies of this? 23 MS. THOMPSON: 24 I did bring extra copies.</p>	<p style="text-align: right;">Page 116</p> <p>1 A Yeah. I would disagree with that 2 statement. 3 Q Number 2, "If 40 percent of women use 4 talc and the relative risk is 1.2, then 7 percent 5 of ovarian cancer cases would be attributable to 6 talc use or 1,577 cases a year in the USA. This 7 is not a trivial number and should not be 8 dismissed." 9 Would you agree or disagree? 10 MS. CURRY: 11 Object to the form. 12 A Disagree. 13 MS. THOMPSON: 14 Q Number 3, "Genital powder use is a 15 modifiable exposure associated with small to 16 moderate increases in risk of most histologic 17 subtypes of epithelial ovarian cancer." 18 Would you agree or disagree? 19 MS. CURRY: 20 Object to the form. 21 A Disagree. 22 I'm sorry. Go ahead. Got it? 23 Disagree. 24 MS. THOMPSON:</p>
<p style="text-align: right;">Page 115</p> <p>1 MR. MIZGALA: 2 Thank you. 3 MS. THOMPSON: 4 Q So, Dr. Birrer, statement number 1, 5 "Given the number of hazard ratios reported in 6 the literature between 1.1 and" -- that should be 7 an -- "1.4 in both case-control and cohort 8 studies, it is disingenuous to state that there 9 is no evidence that talc is associated with 10 ovarian cancer." 11 Do you agree or disagree with that 12 statement? 13 MS. CURRY: 14 Object to the form. 15 A Now, you want me to write an answer 16 here? 17 MS. THOMPSON: 18 Q Yes, please. And then -- and when you 19 tell me, I'm going to put it on here, too. 20 A Yeah. Okay. In these -- the hazard 21 ratios, these are in a case-controlled cohort 22 studies. 23 Q It says in both case-controlled and 24 cohort studies.</p>	<p style="text-align: right;">Page 117</p> <p>1 Q Number 4, "Perineal use of talc-based, 2 not asbestiform, body powder is possibly 3 carcinogenic to humans, group 2B." 4 A Disagree. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Number 5, "The use of perineal talcum 9 powder has been associated with a 20 to 30 10 percent increased risk of ovarian cancer, 11 although it also has been shown to vary by 12 histologic subtype." 13 MS. CURRY: 14 Object to the form. 15 MS. THOMPSON: 16 Q Agree or disagree? 17 A And this is -- like, histologic -- 18 clear cell and endometrioid? Is that what's 19 being implied here? 20 Q Yes. 21 A Disagree. 22 Q Number 6, "A lot of work has been done 23 to clarify the risk reduction of various 24 lifestyle approaches, such as alcohol, obesity,</p>

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<p>1 cigarette smoking and talc use. Some of these</p> <p>2 are subtype specific, such as endometriosis,</p> <p>3 cigarette smoking, while others are general risk</p> <p>4 factors. Use of talc in the genital area has</p> <p>5 consistently been shown to increase the risk of</p> <p>6 OC and therefore is not recommended."</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Disagree.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Number 7, "Inflammatory risk factors</p> <p>12 for EOC are perineal talc exposure, endometriosis</p> <p>13 and pelvic inflammatory disease."</p> <p>14 Agree or disagree?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So this is inclusive of all three;</p> <p>18 right? Endometriosis and --</p> <p>19 MS. THOMPSON:</p> <p>20 Q Yes.</p> <p>21 A Okay.</p> <p>22 Q But if you want to disagree and</p> <p>23 explain, that -- that's fine.</p> <p>24 A I would -- that's a tough one to</p>	<p>1 statement as a whole --</p> <p>2 A Yeah.</p> <p>3 Q -- but would --</p> <p>4 A Caveat.</p> <p>5 Q -- and that will be on the record that</p> <p>6 you --</p> <p>7 A Okay. Parsed it.</p> <p>8 Q The ones that -- yeah.</p> <p>9 Number 9, "Talc powder use is highly</p> <p>10 prevalent in the African-American community and</p> <p>11 has been found to be associated with increased</p> <p>12 risk of ovarian cancer, period."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A So I do believe the first part, that</p> <p>16 it's prevalent in the African-American community.</p> <p>17 The second part is not convincing to me.</p> <p>18 Is that -- can we put that on the</p> <p>19 record? Disagree with the caveat, yeah.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Yeah. "Most women report using</p> <p>22 Johnson's baby powder or Shower to Shower."</p> <p>23 A I don't know.</p> <p>24 Q "The average age women begin using talc</p>
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<p>1 answer. I think endometriosis is a -- I don't</p> <p>2 call it inflammatory. So, yeah, I would -- I</p> <p>3 don't call it inflammatory, so, yeah, I would</p> <p>4 disagree on this. It's too general.</p> <p>5 MS. THOMPSON:</p> <p>6 Q "Risk factors to be considered:</p> <p>7 Parity, oral contraceptive use, breastfeeding,</p> <p>8 tubal ligation, painful periods or endometriosis,</p> <p>9 obesity or polycystic ovarian syndrome, and talc</p> <p>10 use. These risk factors are concordant with</p> <p>11 published epidemiologic data related to</p> <p>12 reproductive factors, use of talc, tubal</p> <p>13 ligation, endometriosis and polycystic ovarian</p> <p>14 syndrome or obesity."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So parity, oral contraceptive,</p> <p>18 breastfeeding, tubal ligation, endometriosis but</p> <p>19 not painful periods or obesity or talc use. Is</p> <p>20 that a --</p> <p>21 MS. THOMPSON:</p> <p>22 Q Okay.</p> <p>23 A -- no or --</p> <p>24 Q So -- so you would disagree with the</p>	<p>1 is 20."</p> <p>2 A Don't know that.</p> <p>3 Q "In the interest of public health, I</p> <p>4 believe we should caution women against using</p> <p>5 genital talcum powder," number 12.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Agree or disagree?</p> <p>10 A I disagree.</p> <p>11 Q Number 13, "Genital powder use is a</p> <p>12 lifestyle risk factor for all serous,</p> <p>13 endometrioid, and clear cell histologic subtypes</p> <p>14 of ovarian cancer."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I disagree.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Number 14, "Overall, there is an</p> <p>20 association between genital talc use and EOC and</p> <p>21 a significant trend with increasing" -- in</p> <p>22 quotations -- "talc years of use."</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p style="text-align: right;">Page 122</p> <p>1 MS. THOMPSON: 2 Q Agree or disagree? 3 A I'm thinking. Disagree. 4 Q Number 15, "Talc-containing powders are 5 hypothesized to promote cancer development by 6 ascending the female genital tract and 7 interacting directly with the ovarian surface 8 epithelium, leading to local inflammation 9 characterized by increased rates of cell 10 division, DNA repair, oxidative stress, and 11 elevated inflammatory cytokines." 12 MS. CURRY: 13 Object to the form. 14 A This is a hypothesis; right? 15 MS. THOMPSON: 16 Q Yes. 17 A I agree. 18 Q "Following" -- number 16. 19 A Uh-huh. 20 Q "Following perineal application, talc 21 particles can migrate from the vagina to the 22 peritoneal cavity and ovaries." 23 MS. CURRY: 24 Object to the form.</p>	<p style="text-align: right;">Page 124</p> <p>1 present in the vagina, can migrate to the upper 2 genital tract." 3 MS. CURRY: 4 Object to the form. 5 MS. THOMPSON: 6 Q Agree or disagree? 7 MS. THOMPSON: 8 A You want to -- do you want to define 9 "biologic credibility"? 10 THE COURT REPORTER: 11 Say again? 12 THE WITNESS: 13 Define "biologic credibility." 14 Sorry. I'm mumbling. 15 THE COURT REPORTER: 16 Uh-huh. 17 MS. THOMPSON: 18 Q Let's define it as evidence of a 19 credible biologic mechanism. 20 A I would disagree. 21 MS. CURRY: 22 Object to the form. 23 MS. THOMPSON: 24 Q Number 20, "The vagina serves as a</p>
<p style="text-align: right;">Page 123</p> <p>1 A Disagree on that. 2 MS. THOMPSON: 3 Q Number 17, "A majority of women 4 experience retrograde menstruation. This 5 suggests a mechanism by which talc particles can 6 travel through the female reproductive tract to 7 the peritoneal cavity and ovaries." 8 MS. CURRY: 9 Object to the form. 10 MS. THOMPSON: 11 Q Agree or disagree? 12 A Disagree. 13 Q Number 18, "It is possible that the 14 passage of talc is aided by retrograde menses and 15 that talc use during menses poses a special 16 risk." 17 Agree or disagree? 18 MS. CURRY: 19 Object to the form. 20 A Disagree. 21 MS. THOMPSON: 22 Q 19, "Biologic credibility of the 23 Talc/EOC association is enhanced by persuasive 24 evidence that inert particles the size of talc,</p>	<p style="text-align: right;">Page 125</p> <p>1 portal to the internal reproductive tract. 2 MS. CURRY: 3 Object to the form. 4 A Agree. 5 MS. THOMPSON: 6 Q 21, "The vagina is a musculoepithelial 7 tube extending from the level of the external 8 genitals to the cervical portion of the uterus. 9 It is a reproductive conduit in all respects, 10 connecting the external environment to the 11 internal genitalia." 12 MS. CURRY: 13 Object to the form. 14 A I'm not sure I understand that 15 statement. 16 What's the internal genitalia? 17 MS. THOMPSON: 18 Q The ovaries. 19 A The ovaries. I'm putting that in here. 20 Q And tubes. Let's say tubes and 21 ovaries. 22 A Okay. External. 23 Yeah, I would agree on that. 24 Q And, actually, I think the --</p>

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<p>1 A Cervix.</p> <p>2 Q I think the uterus is an internal</p> <p>3 genitalia, too.</p> <p>4 A Okay.</p> <p>5 Q But I agree that's somewhat --</p> <p>6 A Yeah. It's a little -- I mean, yeah.</p> <p>7 Genitalia is usually external.</p> <p>8 Q Yeah.</p> <p>9 22, "A review of the literature</p> <p>10 suggests that it is biologically plausible for</p> <p>11 talc particles to migrate from the vagina to the</p> <p>12 peritoneal cavity and ovaries following perineal</p> <p>13 application."</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Agree or disagree?</p> <p>18 A Disagree.</p> <p>19 Q "Talc" -- 23. "Talc placed on the</p> <p>20 perineum may enter the vagina and ascend to the</p> <p>21 upper genital tract."</p> <p>22 Agree or disagree?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 A Disagree.</p> <p>2 MS. THOMPSON:</p> <p>3 Q 27, "Talc is able to migrate through</p> <p>4 the genital tract and gain access to the ovaries</p> <p>5 because talc fibers have been detected in benign</p> <p>6 and malignant ovarian tissues."</p> <p>7 Agree or disagree?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Disagree.</p> <p>11 MS. THOMPSON:</p> <p>12 Q 28, "There are inherent limitations</p> <p>13 quantifying a dose-response due to a lack of</p> <p>14 metrics for how much talc is in an application,</p> <p>15 how much enters the vagina, and how much reaches</p> <p>16 the upper genital tract where, presumably, any</p> <p>17 deleterious effect is mediated. This may account</p> <p>18 for the failure to identify a dose-response in</p> <p>19 many papers on talc and ovarian cancer."</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A It's a big statement. Give me a</p> <p>23 second. I disagree with that.</p> <p>24 MS. THOMPSON:</p>
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<p>1 A Disagree.</p> <p>2 MS. THOMPSON:</p> <p>3 Q 24, "The potential for particulates to</p> <p>4 migrate from the perineum and vagina to the</p> <p>5 peritoneal cavity is indisputable."</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Disagree.</p> <p>9 MS. THOMPSON:</p> <p>10 Q "The Sjösten study" --</p> <p>11 Do you know the Sjösten study?</p> <p>12 A I do.</p> <p>13 Q -- "offers compelling evidence in</p> <p>14 support of the migration hypothesis."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Disagree.</p> <p>18 MS. THOMPSON:</p> <p>19 Q 26, "Talc particulates from perineal</p> <p>20 application have been shown to migrate to the</p> <p>21 ovaries."</p> <p>22 Agree or disagree?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 Q 29, "Tubal ligation is a strong</p> <p>2 protective factor. One possibility for the</p> <p>3 mechanism is blocking the transience of potential</p> <p>4 materials that could impact the health of the</p> <p>5 fimbria."</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Disagree.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Number 30, "Any material -- whether it</p> <p>11 be talc, heavy metals, asbestos, whatever -- can</p> <p>12 migrate from the perineum to the ovaries through</p> <p>13 the reproductive tract. There's an anatomical</p> <p>14 conduit, so it's not blocked. Theoretically, it</p> <p>15 could happen."</p> <p>16 Agree or disagree?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 31, "There is an anatomic conduit from</p> <p>22 the perineum through to the ovary, vagina,</p> <p>23 cervical os, endometrium, and the fallopian tube</p> <p>24 that is, in most women, an open conduit -- that</p>

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<p>1 is in most women an open conduit. On a theoretic 2 level, things can transit." 3 A I would agree with that. 4 MS. CURRY: 5 Object to the form. Sorry. 6 THE WITNESS: 7 I'm sorry. 8 MS. THOMPSON: 9 Q 32, "Genital powder use was associated 10 with ovarian cancer risk in African-American 11 women and are consistent with localized chronic 12 inflammation in the ovary due to particulates 13 that travel through a direct transvaginal route." 14 MS. CURRY: 15 Object to the form. 16 A Disagree. 17 MS. THOMPSON: 18 Q 33, "Biologic credibility for an 19 association would be strengthened by an animal 20 model, but an experiment capturing all of the 21 potential factors in the 'human' model would be 22 very difficult. These elements include 23 chronicity of the exposure, anatomic and 24 physiologic uniqueness of women, effects of</p>	<p>1 Oh, sorry. 2 So the animal model, yes. The rest of 3 it, no. 4 Q Animal model -- 5 A Would be strengthened. 6 Q Okay. We've got in the human model -- 7 A Yeah. 8 Q -- agree. 9 A Okay. 10 Q Okay. And the rest, disagree. 11 A Yeah. 12 Q Okay. I think that's clear, especially 13 with explanation. 14 34, "It is plausible that perineal 15 talc, and other particulate, in parens, that 16 reaches the endometrial cavity, fallopian tubes, 17 ovaries and peritoneum, may elicit a foreign 18 body-type reaction and inflammatory response 19 that, in some exposed women, may progress to 20 epithelial cancers." 21 MS. CURRY: 22 Object to the form. 23 A I disagree with that. 24 MS. THOMPSON:</p>
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<p>1 pregnancy and potential spread through coitus." 2 Agree or disagree? 3 MS. CURRY: 4 Object to the form. 5 A This is in relationship to talc? 6 MS. THOMPSON: 7 Q Yes. 8 A Okay. 9 Q Talc and ovarian cancer. 10 A Yeah, yeah. Okay. 11 It's a two-part issue, unfortunately. 12 I mean, I think it would be strengthened by an 13 animal model. 14 Q And if you -- if you'd -- if you'd like 15 to divide that up into two sections, that would 16 be -- that's fine. 17 A Okay. Well, I -- okay. That's -- 18 yeah. I think -- I think it would be 19 strengthened by an animal model. 20 Q Okay. So -- 21 A "Experiment capturing all the potential 22 would be difficult." 23 I don't agree with that, the second 24 part. Can I do that and split it a little bit?</p>	<p>1 Q 35, "Epidemiologic evidence implicates 2 chronic inflammation as a central mechanism in 3 the pathogenesis of ovarian cancer, the most 4 lethal gynecologic cancer among women in the 5 United States." 6 MS. CURRY: 7 Object to the form. 8 MS. THOMPSON: 9 Q And I'll assume that you don't agree 10 with the last -- 11 A Right. Most lethal? 12 Q -- part of that? But the first part? 13 A I would disagree with this. Yeah. 14 Q 36, "Findings on talc and endometriosis 15 are consistent with previous findings and are 16 compatible with a hypothesis that these factors 17 increase the risk of ovarian cancer and that 18 inflammation -- and that inflammation may be a 19 common pathway." 20 MS. CURRY: 21 Object to the form. 22 A Disagree. 23 MS. THOMPSON: 24 Q 37, "Chron-" --</p>

34 (Pages 130 to 133)

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<p style="text-align: right;">Page 134</p> <p>1 A 37. Right.</p> <p>2 Q "Chronic inflammation has been proposed</p> <p>3 as the possible causal mechanism that explains</p> <p>4 the observed association between certain risk</p> <p>5 factors, such as use of talcum powder (talc) in</p> <p>6 the pelvic region and epithelial ovarian cancer."</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A That's been proposed; right? I would</p> <p>10 agree.</p> <p>11 MS. THOMPSON:</p> <p>12 Q And you would disagree that that is a</p> <p>13 possible cause of mechanism, I assume.</p> <p>14 A Correct.</p> <p>15 Q 38, "Talc particles can induce an</p> <p>16 inflammatory response in vivo, which may be</p> <p>17 important in ovarian cancer risk. Normal ovarian</p> <p>18 cells treated with talc are more likely to</p> <p>19 undergo cell proliferation and neoplastic</p> <p>20 transformation, and cellular generation of</p> <p>21 reactive oxygen species increases with increasing</p> <p>22 exposure to talc."</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p style="text-align: right;">Page 136</p> <p>1 inflammation and an increased risk of ovarian</p> <p>2 cancer. Other specific inflammatory factors have</p> <p>3 also been associated with ovarian cancer."</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A I agree on that.</p> <p>7 MS. THOMPSON:</p> <p>8 Q 42, "The patency of the female tract</p> <p>9 and the nature of ovarian cancer as a surface</p> <p>10 epithelial (mesothelial lesion) make the ovary a</p> <p>11 target for foreign body carcinogenesis."</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Agree or disagree?</p> <p>16 A Disagree.</p> <p>17 Q 43, "Inflammation has been suggested to</p> <p>18 be a major factor leading to epithelial ovarian</p> <p>19 cancer. For example, epidemiologic data have</p> <p>20 shown that asbestos and talc exposure increased</p> <p>21 ovarian cancer risk."</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Disagree.</p>
<p style="text-align: right;">Page 135</p> <p>1 A I disagree with that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q 39, "A growing body of epidemiologic</p> <p>4 evidence suggests that factors causing epithelial</p> <p>5 inflammation are involved in ovarian</p> <p>6 carcinogenesis. Such factors include asbestos</p> <p>7 and talc exposures, endometriosis and pelvic</p> <p>8 inflammatory disease (PID)."</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Disagree with that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q 40, "Direct induction of inflammation</p> <p>14 as a result of endometriosis, talc, and asbestos</p> <p>15 exposure, and PID, as well as ovulation itself,</p> <p>16 may act to promote ovarian tumorigenesis."</p> <p>17 Agree or disagree?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Disagree.</p> <p>21 MS. THOMPSON:</p> <p>22 Q 41, regarding Inflammation. "Studies</p> <p>23 of the inflammatory marker C-reactive protein</p> <p>24 suggests a possible association between</p>	<p style="text-align: right;">Page 137</p> <p>1 MS. THOMPSON:</p> <p>2 Q 44, "Studies have found" -- "also found</p> <p>3 that endometrio-" --</p> <p>4 Let's leave out the "also," since I</p> <p>5 don't know what that refers to.</p> <p>6 "Studies have found that endometriosis,</p> <p>7 pelvic inflammatory disease, and mumps viral</p> <p>8 infection are positively associated with ovarian</p> <p>9 cancer risk. In contrast, tubal ligations and</p> <p>10 hysterectomies, which are thought to reduce the</p> <p>11 exposure of the OSE to environmental inflammation</p> <p>12 initiators have been shown to reduce the risk of</p> <p>13 ovarian cancer."</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I agree on that.</p> <p>17 MS. THOMPSON:</p> <p>18 Q 45, "It has been noted that the</p> <p>19 ovulatory process itself resembles an</p> <p>20 inflammatory reaction, with leukocytic</p> <p>21 infiltration, the release of nitric oxide and</p> <p>22 inflammatory cytokines, basal dilation, DNA</p> <p>23 repair and tissue remodeling."</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 MS THOMPSON:</p> <p>3 Q Agree or disagree?</p> <p>4 A I would agree on that.</p> <p>5 Q 46, "The latency period of more</p> <p>6 advanced, malignant epithelial ovarian cancer</p> <p>7 could be estimated to be approximately 30 to 40</p> <p>8 years."</p> <p>9 MS. CURRY:</p> <p>10 Form.</p> <p>11 A I don't know that. Sorry. I don't</p> <p>12 know.</p> <p>13 MS. THOMPSON:</p> <p>14 Q "If the magnitude of the association is</p> <p>15 to be estimated with precision, it is important</p> <p>16 that consortia are developed and expanded in</p> <p>17 order to generate the appropriate sample size."</p> <p>18 And this is in regard to talcum powder</p> <p>19 in association with ovarian cancer.</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Don't know.</p> <p>23 MS. THOMPSON:</p> <p>24 Q 48, "Neither prospective study" --</p>	<p>1 Q 51, "For baby powder users, it is habit</p> <p>2 that developed at one point and stays regularly."</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Don't know.</p> <p>6 MS. THOMPSON:</p> <p>7 Q 52, "In order to achieve statistical</p> <p>8 significance in a prospective study, we need a</p> <p>9 much larger cohort. For example, we will need to</p> <p>10 study upwards of 200,000 women for ten years."</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I disagree.</p> <p>14 MS. THOMPSON:</p> <p>15 Q You disagree.</p> <p>16 53, "Given inherent limitation of</p> <p>17 cohort studies, it is not surprising that we have</p> <p>18 not been able to confirm the case-control studies</p> <p>19 with prospective studies, but this does not mean</p> <p>20 that the case-control studies were wrong."</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Disagree.</p> <p>24 MS. THOMPSON:</p>
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<p>1 meaning Gertig or Houghton -- "confirmed the</p> <p>2 association of talc use and ovarian cancer raised</p> <p>3 by the case-control studies, but neither study</p> <p>4 was powered to detect a risk of 1.2 and</p> <p>5 therefore, we cannot exclude the possibility."</p> <p>6 Agree or disagree?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Disagree.</p> <p>10 MS. THOMPSON:</p> <p>11 Q 49, "An odds ratio of 1.2 or 1.3 has no</p> <p>12 meaningful clinical impact on a patient."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Don't know.</p> <p>16 MS. THOMPSON:</p> <p>17 Q "There are design studies with" --</p> <p>18 sorry.</p> <p>19 50, "There are design issues with every</p> <p>20 study, both case-controls and cohort studies."</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A I would agree with that.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q Agree or disagree?</p> <p>2 A Disagree.</p> <p>3 Q 54, "It is unlikely that the</p> <p>4 association between talc and ovarian cancer is</p> <p>5 due to confounding, and so it is fair to say that</p> <p>6 if there is a statistically robust relationship</p> <p>7 between talc use and ovarian cancer" -- sorry.</p> <p>8 I'm gonna start all over.</p> <p>9 "It is unlikely that the association</p> <p>10 between talc and ovarian cancer is due to</p> <p>11 confounding, and so it is fair to say that if</p> <p>12 there is a statistically robust relationship</p> <p>13 between talc use and ovarian cancer, it is likely</p> <p>14 to be causal (albeit with intermediate factors</p> <p>15 such as inflammation)."</p> <p>16 Agree or disagree?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 55, "Among many epidemiologic</p> <p>22 variables, no confounders for the association --</p> <p>23 for the association were identified."</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A No opinion.</p> <p>3 MS. THOMPSON:</p> <p>4 Q 56, "There is a consistent association</p> <p>5 between talc and ovarian cancer that appears</p> <p>6 unlikely to be explained by recall or</p> <p>7 confounding."</p> <p>8 Agree or disagree?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Disagree.</p> <p>12 MS. THOMPSON:</p> <p>13 Q 57, "The meta-analyses of the available</p> <p>14 human studies in the peer-reviewed literature</p> <p>15 indicate a consistent and statistically</p> <p>16 significant positive association between perineal</p> <p>17 exposure to talc and ovarian cancer."</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Disagree.</p> <p>21 MS. THOMPSON:</p> <p>22 Q You disagree.</p> <p>23 58, "In studies where the exposure is</p> <p>24 simple (e.g., never versus ever use), recall bias</p>	<p>1 Object to the form.</p> <p>2 A I agree on that.</p> <p>3 MS. THOMPSON:</p> <p>4 Q 61, "The gold standard for translating</p> <p>5 epidemiologic case-controlled or cohort</p> <p>6 observational studies into a clinical meaningful</p> <p>7 data relies on laboratory-derived experiments in</p> <p>8 vitro or in vivo."</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I disagree with that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q On what basis?</p> <p>14 A The -- it depends upon the</p> <p>15 epidemiologic date that that we're talking about.</p> <p>16 Q In other words, if the epidemiologic</p> <p>17 data isn't strong enough, in your opinion, then</p> <p>18 doing in vitro or in vivo studies don't provide</p> <p>19 clinically meaningful data? Is that --</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A It's actually -- it's actually the</p> <p>23 other way around. So I think if it's a weak</p> <p>24 association, then the laboratory data becomes</p>
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<p>1 is unlikely to be an important source of bias."</p> <p>2 Agree or disagree?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A No opinion.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Is that an issue that you would be</p> <p>8 inclined to -- to ask an epidemiologist?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I'd like to see the -- I'd like to see</p> <p>12 the study that it's based on.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay. 59, "Available data are</p> <p>15 indicative of a causal effect." And again,</p> <p>16 referring to talc and ovarian cancer.</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 60, "The data supporting the</p> <p>22 association of talc to the development of ovarian</p> <p>23 cancer is completely inconclusive."</p> <p>24 MS. CURRY:</p>	<p>1 that much more important for biologic</p> <p>2 plausibility.</p> <p>3 If it has -- you know, if it's chimney</p> <p>4 sweeps or lung cancer with smoking, then that's</p> <p>5 clinically meaningful. Those effects are huge.</p> <p>6 That's what I'm -- I'm not associating this just</p> <p>7 with the talc statement. Is it a talc statement?</p> <p>8 MS. THOMPSON:</p> <p>9 Q Uh-huh. I just want to make -- just</p> <p>10 want to make sure that I understand the -- the</p> <p>11 reason for your disagreement. But if you feel</p> <p>12 like it's explained, I'm good.</p> <p>13 A And again, I -- it's sort of the broad</p> <p>14 view that if -- if the -- if the epidemiologic</p> <p>15 case control and cohort studies are so powerful</p> <p>16 with a huge effect, then the biologic experiments</p> <p>17 and lab become less important.</p> <p>18 The other way around, which is really</p> <p>19 what we're dealing with with talc where the</p> <p>20 epidemiologic data I think is not compelling, the</p> <p>21 biologic plausibility becomes more important.</p> <p>22 And it sort of gets back into the Bradford Hill.</p> <p>23 Q Okay. So it's sort of inversely</p> <p>24 proportional in terms of the --</p>

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<p>1 A In terms of value.</p> <p>2 Q -- the importance of it?</p> <p>3 A Yeah.</p> <p>4 Q Okay. Got it.</p> <p>5 62, "Mineral talc occurs naturally in a</p> <p>6 platy, flat form, but may also occur as</p> <p>7 asbestiform fibers, which describes its physical</p> <p>8 form and does not imply the presence of asbestos.</p> <p>9 The purer forms, approximately 90 percent mineral</p> <p>10 talc, are used for" -- oops -- "are used for</p> <p>11 cosmetic and hygiene products, including baby</p> <p>12 powders and feminine hygiene products."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Agree or disagree or no opinion?</p> <p>17 A No opinion.</p> <p>18 Q That's it. I'll think of some new</p> <p>19 questions.</p> <p>20 A I feel like I just took my boards.</p> <p>21 Q Dr. Birrer, how do you define a</p> <p>22 carcinogen?</p> <p>23 A That's an agent or substance which</p> <p>24 causes or induces cancer.</p>	<p>1 Q Are you familiar with the term -- and I</p> <p>2 believe this is more in the toxicological</p> <p>3 literature -- of a complete carcinogen?</p> <p>4 A I would --</p> <p>5 Q Does that have a meaning to you?</p> <p>6 A Yeah. I've seen that described.</p> <p>7 Frankly, I can only -- I can only sort of guess</p> <p>8 what they mean by that. My guess is a complete</p> <p>9 carcinogen, putting out there for the discussion</p> <p>10 between you and me is what I'm describing as the</p> <p>11 classic initiation molecule.</p> <p>12 Q IARC describes -- do I have it? Would</p> <p>13 you look at Exhibit 6, which is the IARC? I just</p> <p>14 wanted to look at their definition of</p> <p>15 carcinogenesis and see whether you would agree</p> <p>16 with it or not.</p> <p>17 A Is it in the preamble?</p> <p>18 Q It's in the preamble. And if I can't</p> <p>19 find it, we may come back to that later.</p> <p>20 Because I can't remember where it is.</p> <p>21 Let's come back to that.</p> <p>22 A It's a big preamble.</p> <p>23 Q Lots of methodology.</p> <p>24 Are you familiar with the Hanahan paper</p>
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<p>1 Q Do you include effect on the promotion</p> <p>2 and progression of cancer as well in a -- when</p> <p>3 you're considering carcinogenicity?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A So historically -- and there's been a</p> <p>7 lot of work on this for decades -- carcinogens</p> <p>8 have been -- usually been associated with</p> <p>9 initiation. So this is a substance -- just to</p> <p>10 you an example. Paint it on to a mouse skin, and</p> <p>11 you develop tumors above -- statistically</p> <p>12 significantly above background.</p> <p>13 Tumor promoters don't do that. But</p> <p>14 when you combine the tumor promoter with the</p> <p>15 carcinogen, instead of getting the 10 tumors, now</p> <p>16 you get a hundred. So promotion is a little bit</p> <p>17 different. That's the historic perspective.</p> <p>18 You know, we've come a long way since</p> <p>19 then, and I think it's gotten even more complex,</p> <p>20 that there are tumor promoters that work by</p> <p>21 transcriptional factors. So that's not genetic</p> <p>22 changes in the tumor, in the cells. Carcinogens</p> <p>23 usually work that way, where you're getting a</p> <p>24 permanent genetic change.</p>	<p>1 from 2011 "Hallmarks of Cancer"?</p> <p>2 A It's a global sort of review. Yes.</p> <p>3 Q A big review --</p> <p>4 A Big.</p> <p>5 Q -- article?</p> <p>6 A Is it --</p> <p>7 Q Do you know -- do you know Dr. Hanahan</p> <p>8 or know of Dr. Hanahan?</p> <p>9 A I know of him.</p> <p>10 Q And it's Hanahan and Weinberg?</p> <p>11 A Weinberg, yeah. Yeah.</p> <p>12 Q Let me go ahead and mark that.</p> <p>13 A Okay.</p> <p>14 (DEPOSITION EXHIBIT NUMBER 10</p> <p>15 WAS MARKED FOR IDENTIFICATION.)</p> <p>16 MS. THOMPSON:</p> <p>17 Make sure those don't have my markings</p> <p>18 on it.</p> <p>19 A It would be easier for me if the</p> <p>20 markings were there.</p> <p>21 MS. THOMPSON:</p> <p>22 Q Exhibit 10. And you agree that this</p> <p>23 article describes the hallmarks of cancer in a</p> <p>24 general sense; right?</p>

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<p>1 A Correct.</p> <p>2 Q And it's a review article in Cell. Are</p> <p>3 you familiar with that journal?</p> <p>4 A I am.</p> <p>5 Q Have you published in that journal?</p> <p>6 Probably.</p> <p>7 A I wished I had published more in that</p> <p>8 journal. Yeah.</p> <p>9 Q And it's -- the title of the article is</p> <p>10 "The Hallmarks of Cancer: The Next Generation."</p> <p>11 But in the top right hand, it says, "Leading edge</p> <p>12 review." So that would be a review article for a</p> <p>13 general audience. Would you agree?</p> <p>14 A Yes. General audience of scientists,</p> <p>15 yeah. Because it's pretty sophisticated.</p> <p>16 Q Agree.</p> <p>17 And it describes the hallmarks of</p> <p>18 cancer generally. These do not specifically</p> <p>19 apply to ovarian cancer in -- in the</p> <p>20 introduction. I'm starting on the third</p> <p>21 sentence. "They include sustaining proliferative</p> <p>22 signaling, evading growth suppressors, resisting</p> <p>23 cell death, enabling replicative" --</p> <p>24 A Third line of -- you're in the abstract</p>	<p>1 Characteristics."</p> <p>2 And it says, the first sentence, "An</p> <p>3 increasing body of research suggests that two</p> <p>4 additional hallmarks of cancer are involved in</p> <p>5 the pathogenesis of some and perhaps all</p> <p>6 cancers."</p> <p>7 I'm gonna skip down to the -- to the</p> <p>8 last sentence in that description.</p> <p>9 "Inflammation" --</p> <p>10 A You're in the figure legend?</p> <p>11 Q In the figure legend.</p> <p>12 "Inflammation by innate immune cells</p> <p>13 designed to fight infections and heal wounds can</p> <p>14 instead result in their inadvertent support of</p> <p>15 multiple hallmark capabilities, thereby</p> <p>16 manifesting the now widely appreciated tumor</p> <p>17 promoting consequences of inflammatory</p> <p>18 responses."</p> <p>19 Would you agree with that statement, in</p> <p>20 a general sense?</p> <p>21 A Yes.</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Sorry.</p>
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<p>1 or in the introduction?</p> <p>2 Q I'm in the -- sorry. I'm in the</p> <p>3 abstract.</p> <p>4 A Okay.</p> <p>5 Q It sort of seemed more like an</p> <p>6 introduction than an abstract to me. So starting</p> <p>7 again. Talking about the hallmarks described in</p> <p>8 this paper, "They include sustaining</p> <p>9 proliferative signalling, evading growth</p> <p>10 suppressors, resisting cell death, enabling</p> <p>11 replicative immortality, enduing angiogenesis,</p> <p>12 and activating invasion and metastasis.</p> <p>13 "Underlining these hallmarks are genome</p> <p>14 instability which generates the genetic diversity</p> <p>15 that expedites their acquisition and</p> <p>16 inflammation, which fosters multiple hallmark</p> <p>17 functions."</p> <p>18 Would you agree with that statement</p> <p>19 from this article?</p> <p>20 A I think as a general statement, yes.</p> <p>21 Q And the article, as you described, is</p> <p>22 quite technical and -- and goes on for a while.</p> <p>23 I'm looking at the Figure 3 on page 658. And the</p> <p>24 heading is "Emerging Hallmarks and Enabling</p>	<p>1 MS. THOMPSON:</p> <p>2 Q Are you familiar with Dr. Balkwill?</p> <p>3 A We're done with this?</p> <p>4 Q We're done with that.</p> <p>5 A Fran? Fran Balkwill? Yes.</p> <p>6 Q And I believe you published with</p> <p>7 Dr. Balkwill?</p> <p>8 A I believe we're on two. I can't</p> <p>9 remember.</p> <p>10 Q And she is a well-renowned cancer</p> <p>11 biologist. Would you agree?</p> <p>12 A I would agree.</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 (DEPOSITION EXHIBIT NUMBER 11</p> <p>16 WAS MARKED FOR IDENTIFICATION.)</p> <p>17 MS. THOMPSON:</p> <p>18 Q I'm gonna mark as Exhibit 11 an article</p> <p>19 written by Dr. Balkwill.</p> <p>20 Have you seen this article, Dr. Birrer?</p> <p>21 A I'm actually not familiar with this.</p> <p>22 But I know Fran's work pretty well.</p> <p>23 Q Okay. Well, let's just --</p> <p>24 A Yeah.</p>

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<p style="text-align: right;">Page 154</p> <p>1 Q -- look through it. And this is also a 2 review article. 3 A Uh-huh. 4 Q And -- and this article is in -- is in 5 The Lancet. Correct? 6 A Correct. 7 Q And is -- we've already mentioned that 8 Dr. Balkwill is well regarded. 9 Is The Lancet a well-regarded journal? 10 A Yes. 11 MS. CURRY: 12 Object to the form. 13 MS. THOMPSON: 14 Q Is it one of the most respected 15 journals, would you say? 16 MS. CURRY: 17 Object to the form. 18 A It's not as good as Cell. 19 MS. THOMPSON: 20 Q Oh. I won't tell them you said that. 21 But, generally -- generally speaking -- 22 A Yes. 23 Q -- physicians and scientists would 24 recognize The Lancet?</p>	<p style="text-align: right;">Page 156</p> <p>1 progression, and immunosuppression than they are 2 to mount an effective host antitumor response. 3 Moreover cancer suscep- -- susceptibility and 4 severity may be associated with functional 5 polymorphisms of inflammatory cytokine genes, and 6 deletion or inhibition of inflammatory cytokines, 7 inhibits development of experimental cancer. 8 "If genetic damage is the 'match that 9 lights the fire' of cancer, some types of 10 inflammation may provide the 'fuel that feeds the 11 flames.'" 12 That was a long passage, but do you 13 generally agree with the statement by 14 Dr. Balkwill? 15 MS. CURRY: 16 Object to the form. 17 A I do. 18 MS. THOMPSON: 19 Q And then look down on that same page to 20 panel 1. 21 A Uh-huh. 22 Q And the title of that panel, for lack 23 of better word, is "Some Associations Between 24 Inflammation and Cancer Risk." Right?</p>
<p style="text-align: right;">Page 155</p> <p>1 A It's well read -- it's well read and 2 it's -- it has a substantial impact factor. 3 Q And we don't know in this situation 4 whether Dr. Balkwill -- do you know 5 Dr. Mantovani, the second author on this paper? 6 A No. I don't recognize him. 7 Q We don't know whether this article was 8 invited or submitted, but, regardless, certainly 9 the readers of Lancet would look to Dr. Balkwill 10 as being an expert to discuss inflammation in 11 cancer; correct? 12 MS. CURRY: 13 Object to the form. 14 A Correct. 15 MS. THOMPSON: 16 Q So reading in -- in the abstract, which 17 looks like an introduction to me again, but 18 reading the abstract, "This article reviews" -- 19 second line -- "This article reviews the links 20 between cancer and inflammation and discusses the 21 implications of these links for cancer prevention 22 and treatment. We suggest that the inflammatory 23 cells and cytokines found in tumors are more 24 likely to contribute to tumor growth,</p>	<p style="text-align: right;">Page 157</p> <p>1 A 901. Got it. 2 Q And under "Malignancy," it lists 3 various types of cancer in which there's 4 association between inflammation and cancer risk. 5 Correct? 6 A Correct. 7 Q And one of them -- one of them is 8 ovarian; right? 9 A I see it. 10 Q And in the -- under the inflammatory 11 stimulus/condition, it lists pelvic inflammatory 12 disease, talc, tissue remodeling. 13 Do you agree that Dr. Balkwill, at 14 least in 2001, believed that talc was an 15 inflammatory stimulus and condition for the 16 association with ovarian cancer? 17 MS. CURRY: 18 Object to the form. 19 A Yeah. So, again, this is a -- a bit of 20 a recurring theme in the sense that I don't know 21 if Fran -- I haven't talked to her about this 22 review. I don't know if Fran believed that and 23 got it wrong or, more likely, this is a review 24 article. So you include everything, even though</p>

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<p>1 she may not feel really strongly about that. So</p> <p>2 it's a little hard to tell.</p> <p>3 MS. THOMPSON:</p> <p>4 Q But you would agree that both -- both</p> <p>5 Dr. Balkwill and The Lancet would not include</p> <p>6 something in a review article for which there was</p> <p>7 no evidence?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Again, it depends on how they're</p> <p>11 proposing it; that there has been -- there has --</p> <p>12 there have been reports associating PID, talc --</p> <p>13 I don't know what tissue remodeling is, although</p> <p>14 that is probably the most reasonable -- but PID</p> <p>15 and talc as associated with a risk for ovarian</p> <p>16 cancer. That's a true statement. I don't -- and</p> <p>17 the reason we're here today is because I reviewed</p> <p>18 that literature and I don't believe the</p> <p>19 conclusion.</p> <p>20 But you could put it into review.</p> <p>21 That's -- that's the nature of a review article.</p> <p>22 We all put things in that we feel the reader</p> <p>23 needs to see to get a full understanding of</p> <p>24 science, but we don't necessarily -- we're not</p>	<p>1 them to say, okay, this has been studied</p> <p>2 epidemiologically and in other situations. So I</p> <p>3 think -- I think that's what you're grappling</p> <p>4 with. It's a review article. So these things</p> <p>5 show up.</p> <p>6 Q Okay. So -- so there are two</p> <p>7 possibilities --</p> <p>8 A Uh-huh.</p> <p>9 Q -- it sounds like. Either Dr. Balkwill</p> <p>10 got it wrong --</p> <p>11 A Uh-huh.</p> <p>12 Q -- or because this was a review</p> <p>13 article, she was reporting evidence that was in</p> <p>14 the literature that she felt that readers of this</p> <p>15 article should be aware of.</p> <p>16 A Correct. Don't tell her I said the</p> <p>17 former.</p> <p>18 MS. CURRY:</p> <p>19 Object to the form of the question.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay. I -- I -- I will do that for</p> <p>22 you, Dr. Birrer.</p> <p>23 A Uh-huh.</p> <p>24 Q And -- and this paper is not recent,</p>
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<p>1 convinced.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Well, but -- but back to my question,</p> <p>4 which I think was Dr. Balkwill and The Lancet</p> <p>5 would not have put this in with no evidence.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A I don't agree with that.</p> <p>9 MS. THOMPSON:</p> <p>10 Q You think they would put something in</p> <p>11 that they did not believe there was any evidence</p> <p>12 to support?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Again, it depends on how you define</p> <p>16 that. So when you say "no evidence," you mean no</p> <p>17 epidemiologic studies that have ever shown an</p> <p>18 association. We know that's not true. There</p> <p>19 have been some. So there is some evidence. It's</p> <p>20 the totality of the evidence that I don't</p> <p>21 believe.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Okay.</p> <p>24 A But it would not be unreasonable for</p>	<p>1 you will agree?</p> <p>2 A 2010?</p> <p>3 Q 2001.</p> <p>4 A 2001. Uh-huh. Yeah. Okay.</p> <p>5 Q Are you aware of anything that</p> <p>6 Johnson & Johnson did in 2001 to address this</p> <p>7 idea of Dr. Balkwill and others, including</p> <p>8 Dr. Ness, that talc may be causing ovarian cancer</p> <p>9 through an inflammatory process?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A In 2000 -- in 2001?</p> <p>13 MS. THOMPSON:</p> <p>14 Q Right.</p> <p>15 Did Johnson & Johnson respond to what</p> <p>16 at least is reported as being in the literature</p> <p>17 in Lancet?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I'm not aware of that.</p> <p>21 MS. THOMPSON:</p> <p>22 Q I'm gonna mark as Exhibit 13 --</p> <p>23 MS. EVERETT:</p> <p>24 12.</p>

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<p>1 MS. THOMPSON: 2 Q Oh, there it is. 3 (DEPOSITION EXHIBIT NUMBER 12 4 WAS MARKED FOR IDENTIFICATION.) 5 MS. THOMPSON: 6 Q Exhibit 12 is going to be another 7 article -- another review article by Dr. Reuter 8 and authors. Oh, we need to -- sorry. Make sure 9 that's not my copy. 10 A This is mine? 11 Q That's yours, yeah. 12 Are you familiar with the journal of 13 Free Radical Biology in Medicine? 14 A I am familiar. Not something I publish 15 in much. 16 Q And probably doesn't have quite the 17 reputation of The Lancet or Cell? 18 A I don't think so. 19 Q But regardless, it's peer-reviewed. 20 A Uh-huh. 21 Q Are you familiar with any of these 22 authors? 23 A Not firsthand. Aggarwal I may have 24 heard about, but not, firsthand, no.</p>	<p>1 A Where are you now? 2 Q I'm turning to page 2, 1604 in the 3 introduction section. 4 A Uh-huh. 5 Q The second paragraph reads "Under a 6 sustained environmental stress, ROS -- R-O-S -- 7 are produced over a long time, and thus 8 significant damage may occur to cell structure 9 and functions and may induce somatic mutations 10 and neoplastic transformation. 11 "Indeed, cancer initiation and 12 progression have been linked to oxidative stress 13 by increasing DNA mutations or inducing DNA 14 damage, genome instability, and cell 15 proliferation." 16 Would you agree with that sentence in a 17 general sense? 18 MS. CURRY: 19 Object to the form. 20 A I'm just looking at the references. 21 MS. THOMPSON: 22 Q And take a moment if you need to do 23 that. 24 A Sure.</p>
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<p>1 Q And reading -- and the title of this 2 review article is "Oxidative stress, 3 inflammation, and cancer. How are they linked?" 4 Right? 5 A Correct. 6 Q Reading in the abstract, the last 7 couple of sentences starting with "How oxidative 8 stress activates inflammatory pathways leading to 9 a transformation of a normal cell to tumor cell, 10 tumor cell survival, proliferation, 11 chemoresistance, radioresistance, invasion, 12 angiogenesis, and stem cell survival is the focus 13 of this review. Overall, observations to date 14 suggest that oxidative stress, chronic 15 inflammation, and cancer are closely linked." 16 Would you agree with that statement? 17 MS. CURRY: 18 Object to the form. 19 A Yes. 20 MS. THOMPSON: 21 Q In a general sense, in a review 22 article? 23 A Correct. 24 Q And --</p>	<p>1 I think as a general statement, I 2 wouldn't -- I would not disagree with that. I 3 think that's -- yeah. 4 Q Sorry. 5 A Go ahead. 6 Q And this article was published in 2010; 7 correct? 8 A Correct. 9 Q And looking at Table 2, a partial list 10 of cancers that have been linked to reactive 11 oxygen species, and under that list is ovarian 12 cancer. 13 Would you agree that in 2010 ovarian 14 cancer had been linked to reactive oxygen 15 species? 16 MS. CURRY: 17 Object to the form. 18 A Yeah. This was a little more 19 complicated in the sense I'm not sure why every 20 case was not listed because reactive oxygen 21 species are present in essentially every cell in 22 the body. So it's a -- it's an odd table in that 23 it's a subset and then -- it's sort of implying 24 reactive oxygen species are not important in</p>

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<p>1 other cancers.</p> <p>2 And, then, too, what they reference is</p> <p>3 51, which is a really odd reference. "Loss of</p> <p>4 Mkp3 mediated by oxidative stress enhances tumor</p> <p>5 genicity and chemoresistance of ovarian cancer</p> <p>6 cells."</p> <p>7 Hardly a paper -- I mean, I'm</p> <p>8 extrapolating the title. Hardly a paper that</p> <p>9 would say that reactive oxygen species is</p> <p>10 critical to the development of ovarian cancer.</p> <p>11 That's chemoresistance. That's -- that's at the</p> <p>12 end of natural history, so...</p> <p>13 MS. THOMPSON:</p> <p>14 Q But at least the authors in this</p> <p>15 peer-reviewed review article thought appropriate</p> <p>16 to list ovarian cancer under one of the cancers</p> <p>17 that have been linked to reactive oxygen species;</p> <p>18 right?</p> <p>19 A It's there.</p> <p>20 (DEPOSITION EXHIBIT NUMBER 13</p> <p>21 WAS MARKED FOR IDENTIFICATION.)</p> <p>22 MS. THOMPSON:</p> <p>23 Q I'm marking as Exhibit 13 another</p> <p>24 review article from Lancet. This one, a little</p>	<p>1 Object to the form.</p> <p>2 A Oza and Vergote are -- Vergote is a</p> <p>3 surgeon and very much clinical. I don't think he</p> <p>4 does any work in the lab. Oza is developmental</p> <p>5 therapeutics clinical. Charlie is the scientist</p> <p>6 here.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Okay. And I think --</p> <p>9 A Yeah.</p> <p>10 Q -- at least with this review article,</p> <p>11 it was meant to address --</p> <p>12 A Everything.</p> <p>13 Q -- all -- all aspects --</p> <p>14 A Right.</p> <p>15 Q -- from my reading of it.</p> <p>16 A And I think Stephanie works for Amit, I</p> <p>17 think.</p> <p>18 Q So these are well-regarded --</p> <p>19 A Uh-huh.</p> <p>20 Q -- scientists and experts in ovarian</p> <p>21 cancer. You would agree?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Yes.</p>
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<p>1 more current.</p> <p>2 Have you seen this article, Dr. Birrer?</p> <p>3 A I know the -- I know the authors, but I</p> <p>4 haven't actually --</p> <p>5 Q Oh. Did I give you a highlighted --</p> <p>6 A I -- I don't think so.</p> <p>7 Q Okay.</p> <p>8 A It would be helpful if it was</p> <p>9 highlighted.</p> <p>10 Q It would be helpful to me also.</p> <p>11 That's okay.</p> <p>12 And, in fact, these -- I think three of</p> <p>13 the four authors you have published with. Does</p> <p>14 that sound right?</p> <p>15 A Ignace, Charlie, Amit, I know all of</p> <p>16 them. I don't know Stephanie.</p> <p>17 Q I think that was the one that I did not</p> <p>18 see on -- on your CV as one of your coauthors.</p> <p>19 And this review article -- and you</p> <p>20 would assume that -- well, we don't have to</p> <p>21 assume -- are Dr. Gourley, Dr. Vergote and</p> <p>22 Dr. Oza considered experts in the field of</p> <p>23 epithelial ovarian cancer?</p> <p>24 MS. CURRY:</p>	<p>1 MS. THOMPSON:</p> <p>2 Q And this is a review article, as we</p> <p>3 said, just published in Lancet within -- March</p> <p>4 23rd, so within the last week.</p> <p>5 Have you seen this article?</p> <p>6 A This one?</p> <p>7 Q Yes.</p> <p>8 A No. Just the last week.</p> <p>9 Q Let's look in the first section,</p> <p>10 Epidemiology and Risk Factors. And the last</p> <p>11 sentence, "Risk factors for EOC include the</p> <p>12 number of lifetime of ovulations (absence of</p> <p>13 pregnancy), early age of menarche and late age at</p> <p>14 menopause, family history of EOC, smoking, benign</p> <p>15 gynecological conditions, including</p> <p>16 endometriosis -- endometriosis, polycystic ovary</p> <p>17 disease and pelvic inflammatory disease, and</p> <p>18 potentially use of talcum powder."</p> <p>19 Would you agree that at least the</p> <p>20 authors thought that the use of talcum powder is</p> <p>21 potentially a risk factor for EOC?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A And, again, this is a review. So I</p>

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<p>1 think they're trying to be inclusive. And I</p> <p>2 don't actually know that any of them believe</p> <p>3 that.</p> <p>4 MS. THOMPSON:</p> <p>5 Q So would -- would they -- would they</p> <p>6 have -- would it be the two options again, either</p> <p>7 they're wrong --</p> <p>8 A (Nods affirmatively.)</p> <p>9 Q -- or that they're just reporting on</p> <p>10 what the literature states?</p> <p>11 A (Nods affirmatively.)</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Yeah. I think it extends beyond</p> <p>15 talcum, too, to be honest with you. I don't -- I</p> <p>16 don't consider smoking to be a strong risk for</p> <p>17 ovarian cancer. And PID, I don't either.</p> <p>18 So -- and I don't know of many of my --</p> <p>19 I mean, we don't -- we don't want our patients</p> <p>20 smoking. But I don't know of many of the</p> <p>21 gynecologic oncologists I work with who -- that's</p> <p>22 on their -- that's on their risk list.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Even for mucinous?</p>	<p>1 Q So the authors, if they were reporting</p> <p>2 on the potential risk of talcum powder use in</p> <p>3 ovarian cancer chose to cite Penninkilampi as a</p> <p>4 source -- as the source for that information;</p> <p>5 correct?</p> <p>6 A They reference it.</p> <p>7 Q And you would assume they would choose</p> <p>8 the most authoritative article that was available</p> <p>9 in the literature?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Wouldn't you?</p> <p>14 A I would not assume that.</p> <p>15 Q You would assume they'd pick something</p> <p>16 that wasn't as authoritative? There's something</p> <p>17 else they could have picked?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A They may have -- they may have picked</p> <p>21 that because it was one of the more recent</p> <p>22 meta-analyses, and so it was convenient. And</p> <p>23 it's flawed. We can go over if you'd like.</p> <p>24 MS. THOMPSON:</p>
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<p>1 A Well, now you're gonna get complicated</p> <p>2 on me because, you know, there are people that</p> <p>3 don't think -- there are mucinous tumors of the</p> <p>4 ovary. Bob Kirkman is one of them, and that is</p> <p>5 all GI.</p> <p>6 So I think -- I don't think it's all</p> <p>7 that relevant because it's such a rare tumor.</p> <p>8 Q And the citation for the reference</p> <p>9 that --</p> <p>10 A 8?</p> <p>11 Q -- a risk factor potentially would --</p> <p>12 could be the use of talcum powder is the</p> <p>13 Penninkilampi meta-analysis; right?</p> <p>14 A That's referenced in 8, yes.</p> <p>15 Q So at least the authors, the reviewers,</p> <p>16 the editors of the journal felt that the most</p> <p>17 authoritative source would be that Penninkilampi</p> <p>18 meta-analysis. Would you agree?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Say that again. I'm sorry.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Yeah.</p> <p>24 A I could read it.</p>	<p>1 Q Well, I'm just saying these authors</p> <p>2 picked that to -- to support the statement in</p> <p>3 their review article in The Lancet that the use</p> <p>4 of talcum powder is potentially a risk factor for</p> <p>5 ovarian cancer.</p> <p>6 A Well, I would agree that they picked</p> <p>7 that reference. I disagree that that's because</p> <p>8 they thought it was the most authoritative</p> <p>9 article. It is one of the more recent, and, so,</p> <p>10 therefore, a lot of the other papers would be</p> <p>11 included in it. So it's a convenient place to</p> <p>12 steer a reader.</p> <p>13 Q Do you think they'd pick it if they</p> <p>14 thought it was flawed?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Probably if -- if it was seriously</p> <p>18 flawed, I don't think they would have picked it.</p> <p>19 Yeah.</p> <p>20 MS. THOMPSON:</p> <p>21 Q And would you agree, also, that the</p> <p>22 reviewers would not have included an article that</p> <p>23 the reviewers felt was seriously flawed?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Again, it's a little bit -- having been</p> <p>3 involved in these processes, to be perfectly</p> <p>4 frank, you get a review article with a review of</p> <p>5 147 references, you're not gonna go through them</p> <p>6 all. So I don't know I can say with any</p> <p>7 authority that the reviewers looked at this and</p> <p>8 said, gee, they picked the one talc paper that is</p> <p>9 really spectacular.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Okay. So there were -- but there --</p> <p>12 there were no --</p> <p>13 A The review, and -- and it's true for</p> <p>14 the editor too.</p> <p>15 Q Okay. So at least there were no red</p> <p>16 flags in front of the reviewers and the editor</p> <p>17 when they saw the Penninkilampi article cited for</p> <p>18 that reference?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I --</p> <p>22 MS. THOMPSON:</p> <p>23 Q That would cause them to --</p> <p>24 A I don't know they noticed it.</p>	<p>1 lunch?</p> <p>2 MS. CURRY:</p> <p>3 We actually did order in lunch. I'm</p> <p>4 not sure if we -- if you want to take a quick</p> <p>5 break, I can check on the estimated time of</p> <p>6 arrival.</p> <p>7 MS. THOMPSON:</p> <p>8 Sure. Or we can just keep going until</p> <p>9 we get word. Whatever --</p> <p>10 A Or we could just finish.</p> <p>11 MR. MIZGALA:</p> <p>12 I second that.</p> <p>13 MS. GARBER:</p> <p>14 You guys keep going. I'll check.</p> <p>15 MS. THOMPSON:</p> <p>16 Are you telling me you're not having</p> <p>17 fun? I think he liked the test.</p> <p>18 THE WITNESS:</p> <p>19 Yeah. It would have been nice to have</p> <p>20 the little box -- the little circles you could</p> <p>21 fill in. You know.</p> <p>22 MS. THOMPSON:</p> <p>23 And then I could just put it in the</p> <p>24 computer.</p>
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<p>1 Q Okay. But the editors selected that</p> <p>2 article; correct?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q For whatever reason?</p> <p>7 A The --</p> <p>8 Q The authors.</p> <p>9 A The authors selected it.</p> <p>10 Q Sorry.</p> <p>11 A Not -- not the editors. Correct.</p> <p>12 Q Thank you. I meant to say authors.</p> <p>13 A And, again, I would just emphasize it</p> <p>14 says "potentially use of talcum powder."</p> <p>15 Q That's right.</p> <p>16 A Okay.</p> <p>17 Q And at least in this statement, the</p> <p>18 reference to talcum powder as potentially a risk</p> <p>19 factor did not separate out the subtypes. It's</p> <p>20 referring to EOC; correct?</p> <p>21 A I -- that's the way I would read it,</p> <p>22 right.</p> <p>23 MS. THOMPSON:</p> <p>24 Dawn, what are you thinking about</p>	<p>1 THE WITNESS:</p> <p>2 No mumbling? Sorry.</p> <p>3 MS. CURRY:</p> <p>4 Okay. So the lunch, I was just told,</p> <p>5 is actually here. So it's up to you when you're</p> <p>6 in a good breaking point.</p> <p>7 MS. THOMPSON:</p> <p>8 Dr. Birrer, do you want to take a break</p> <p>9 for lunch or do you want to go another 15 or 20</p> <p>10 minutes?</p> <p>11 THE WITNESS:</p> <p>12 Going would be fine.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay.</p> <p>15 A Yeah.</p> <p>16 Q Let's -- let's look at the IARC 93, the</p> <p>17 one that --</p> <p>18 A Uh-huh.</p> <p>19 Q -- addresses the nonasbestiform talc.</p> <p>20 And turning to page 277 in the exposure data</p> <p>21 introduction --</p> <p>22 A Uh-huh. Do you want to use mine?</p> <p>23 Q Let's have a blank one to follow along.</p> <p>24 Does this section define the</p>

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<p>1 nonasbestiform talc?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Oh, there it is. And let's just read</p> <p>6 along in that third paragraph.</p> <p>7 A Okay.</p> <p>8 Q "Asbestiform talc fibers are very long</p> <p>9 and thin and occur in parallel bundles that are</p> <p>10 easily separated from one another by hand</p> <p>11 pressure." And asbestos -- no. Just strike</p> <p>12 that.</p> <p>13 You're -- you're not an expert in the</p> <p>14 different types of asbestos or talc in its</p> <p>15 different --</p> <p>16 A I'm learning --</p> <p>17 Q Are you?</p> <p>18 A I'm learning a lot.</p> <p>19 Q I -- well, I don't want to ask those</p> <p>20 questions to you later because then you'll be an</p> <p>21 expert.</p> <p>22 Let's -- let's go to the conclusions of</p> <p>23 IARC. We've already established that IARC used a</p> <p>24 pretty extensive methodology in reaching their</p>	<p>1 was -- well, that there was limited evidence in</p> <p>2 humans for the carcinogenicity in peroneal use of</p> <p>3 talcum powder body product. Is that what IARC</p> <p>4 concluded?</p> <p>5 A That's in 6.1, the second one. Yes.</p> <p>6 Q Right.</p> <p>7 And there is limited evidence in</p> <p>8 experimental animals; right?</p> <p>9 A 6.2. Yes.</p> <p>10 Q And in the rationale, the authors</p> <p>11 state, third paragraph, "For peroneal use of</p> <p>12 talcum-based body power, many case-control</p> <p>13 studies of ovarian cancer found a modest but an</p> <p>14 unusually consistent excessive risk, although the</p> <p>15 impact of bias and potential confounding could</p> <p>16 not be ruled out."</p> <p>17 Is -- is that your understanding of the</p> <p>18 conclusions?</p> <p>19 A That's what they concluded.</p> <p>20 Q And --</p> <p>21 A We're done with IARC?</p> <p>22 Q We're done with IARC.</p> <p>23 And you also looked at the Health</p> <p>24 Canada Assessment; right?</p>
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<p>1 conclusions; right?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Yes.</p> <p>5 MS. THOMPSON:</p> <p>6 Q And in your -- in your opinion, IARC</p> <p>7 got -- got it wrong; right?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A I think the net -- and I -- let me just</p> <p>11 summarize. I agree that they did a thorough sort</p> <p>12 of process here. In the end, what they</p> <p>13 concluded, I think, was -- was wrong. If I</p> <p>14 recall correctly, it's 2B.</p> <p>15 MS. THOMPSON:</p> <p>16 Q That's right.</p> <p>17 A Was the classification.</p> <p>18 Q But 2B does not mean that it's not</p> <p>19 carcinogenic, does it?</p> <p>20 A Means it's possible carcinogenic. I</p> <p>21 think that's by definition.</p> <p>22 Q Right.</p> <p>23 And -- and in this situation, the</p> <p>24 reason for the classification was that there</p>	<p>1 A Yes.</p> <p>2 Q And we agreed that the methodology that</p> <p>3 Health Canada applied for -- for their</p> <p>4 determination was also extensive; right?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A They were systematic and thorough. I</p> <p>8 think it was pretty complicated, yeah.</p> <p>9 MS. THOMPSON:</p> <p>10 Q And what's your understanding of the</p> <p>11 conclusions reached by the -- Health Canada?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Scientists.</p> <p>16 A Well, they concluded that there was a</p> <p>17 low risk of harm to the environment from talc.</p> <p>18 Q Is that what you came away with?</p> <p>19 A Well, it was in the third paragraph.</p> <p>20 So it was important to note that. But they did</p> <p>21 conclude that talc meets one of the criteria.</p> <p>22 That was Section 64. And so they concluded that</p> <p>23 it potentially presented a health risk to</p> <p>24 Canadians, if I got that right.</p>

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<p>1 Q And do you think it was just to</p> <p>2 Canadians?</p> <p>3 A Well, that's the way they quoted it.</p> <p>4 Q And --</p> <p>5 A In fact, the statement is "may</p> <p>6 constitute a danger in Canada to health" --</p> <p>7 "human health" -- "human life or health."</p> <p>8 Q And they also made the -- well, let's</p> <p>9 read beginning on page little -- little 3, i --</p> <p>10 iii?</p> <p>11 A I'm sorry. Where are you?</p> <p>12 Q Little -- little roman numeral 3.</p> <p>13 A Three? Yeah.</p> <p>14 Q Is your understanding that the -- that</p> <p>15 Health Canada found that the available data were</p> <p>16 indicative of a causal effect?</p> <p>17 A Where are you reading?</p> <p>18 Q I was just asking you what your</p> <p>19 understanding was.</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I'm not sure that they actually found</p> <p>23 causal effects.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q -- executive summary.</p> <p>2 A Yeah. Uh-huh.</p> <p>3 Q "Given that there is potential for</p> <p>4 peroneal exposure to talc from the use of various</p> <p>5 self-care products, for example, body powder,</p> <p>6 baby powder, diaper and rash creams, gentle</p> <p>7 antiperspirants and deodorants, body wipes, bath</p> <p>8 bombs, a potential concern for human health has</p> <p>9 been identified."</p> <p>10 Correct?</p> <p>11 A I agree with that.</p> <p>12 Q And is it your opinion that Health</p> <p>13 Canada got it wrong also?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A So it's interesting. When I reviewed</p> <p>17 this was -- again, this is a very recent -- looks</p> <p>18 like December 2018 -- decision by Health Canada</p> <p>19 based upon a huge body of literature, which I had</p> <p>20 reviewed and come to a different conclusion.</p> <p>21 So there really was not very much new</p> <p>22 data to draw this conclusion. So, you know,</p> <p>23 again, I think very much like IARC, I think they</p> <p>24 got it wrong.</p>
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<p>1 Q Okay. Well, let's -- let's read</p> <p>2 beginning -- the paragraph with "The</p> <p>3 meta-analyses."</p> <p>4 A Where are you? Oh, the -- yeah.</p> <p>5 Q "The meta-analyses of the available</p> <p>6 human studies in the peer-reviewed literature" --</p> <p>7 A Yep.</p> <p>8 Q -- "indicate a statistically</p> <p>9 significant positive association between perineal</p> <p>10 exposure to talc and ovarian cancer. Further,</p> <p>11 available data are indicative of a causal</p> <p>12 effect."</p> <p>13 A Uh-huh.</p> <p>14 Q So they did --</p> <p>15 A (Nods affirmatively.)</p> <p>16 Q -- determine that it was indicative of</p> <p>17 a causal effect; right?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A That's what they said, yes. It's not</p> <p>21 referenced, but --</p> <p>22 MS. THOMPSON:</p> <p>23 Q Well, this is the --</p> <p>24 A Yeah.</p>	<p>1 MS. THOMPSON:</p> <p>2 Q And you don't think that this is a</p> <p>3 situation where scientists can look at the same</p> <p>4 data and -- and make different conclusions?</p> <p>5 A No.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Do you have any reason to believe that</p> <p>10 the scientists who worked on this project were</p> <p>11 unreasonable?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Other than the fact they drew the wrong</p> <p>15 conclusion here, I know nothing else about them,</p> <p>16 so...</p> <p>17 MS. THOMPSON:</p> <p>18 Q You don't have any reason to believe</p> <p>19 they were incompetent?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A No.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Do you have any reason to believe that</p>

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<p style="text-align: right;">Page 186</p> <p>1 they weren't good scientists?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A I don't really have a lot of knowledge</p> <p>5 of them. If I could actually find the list of</p> <p>6 individuals who made this decision -- I don't</p> <p>7 think it's published.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And did you -- this was done under the</p> <p>10 auspices, I believe, of the Minister of Health.</p> <p>11 A Uh-huh.</p> <p>12 Q You don't know the Minister of Health</p> <p>13 in Canada, do you?</p> <p>14 A I don't.</p> <p>15 Q Or know that he would -- or she would</p> <p>16 not be competent?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I have no direct evidence for that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Do you take any issue with the weight</p> <p>22 of the evidence methodology that Health Canada</p> <p>23 applied?</p> <p>24 A No.</p>	<p style="text-align: right;">Page 188</p> <p>1 A In terms of peer review, scientific</p> <p>2 peer review?</p> <p>3 Q Correct.</p> <p>4 A I can't say that definitively.</p> <p>5 Q If you'll look at the -- and the copy</p> <p>6 that I'm looking at doesn't have page numbers, so</p> <p>7 that's why it's -- I'm --</p> <p>8 A Roughly.</p> <p>9 Q -- making it difficult.</p> <p>10 But if you look at the big bold</p> <p>11 introduction that comes right after the synopsis,</p> <p>12 it should be about the -- it may be the little</p> <p>13 numbers.</p> <p>14 A Introduction?</p> <p>15 Q Yeah.</p> <p>16 And the very bottom of that page, I'm</p> <p>17 reading "The human health portion of this</p> <p>18 assessment has undergone external peer review</p> <p>19 and/or consultation?"</p> <p>20 Doesn't -- does the assessment, at</p> <p>21 least, state that it underwent peer review and</p> <p>22 consultation?</p> <p>23 A It states that. I don't quite -- I</p> <p>24 don't honestly know what that means.</p>
<p style="text-align: right;">Page 187</p> <p>1 Q Only that they came up with the wrong</p> <p>2 conclusion; right?</p> <p>3 A Correct.</p> <p>4 Q And this assessment, like IARC, was</p> <p>5 based on talc -- cosmetic-grade talc and not on</p> <p>6 potential impurities such as asbestos. Is that</p> <p>7 also your understanding?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A That is my understanding. So, you</p> <p>11 know, again, it's -- it's the same epi data. The</p> <p>12 epi data is focused on talcum powder. So that --</p> <p>13 that applies here, too.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And is it your understanding that the</p> <p>16 human health portion of the Health Canada</p> <p>17 assessment went through a peer-review process?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 MS. THOMPSON:</p> <p>21 Q With external reviewers.</p> <p>22 A I didn't see that described.</p> <p>23 Q So you don't know one way or the other</p> <p>24 whether it went through a review process?</p>	<p style="text-align: right;">Page 189</p> <p>1 Q Okay.</p> <p>2 A And the public comment period, of</p> <p>3 course, is just a governmental response.</p> <p>4 Q Do you know if Johnson & Johnson has</p> <p>5 submitted comments to Health Canada?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Not that I know of.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Have you submitted comments to Health</p> <p>11 Canada --</p> <p>12 A No.</p> <p>13 Q -- with your opinions?</p> <p>14 A No.</p> <p>15 Q Do you intend to submit any opinions to</p> <p>16 Health Canada?</p> <p>17 A I doubt it.</p> <p>18 Q You are -- are you aware that talc used</p> <p>19 as a dry powder lubricant on condoms was</p> <p>20 substituted with cornstarch in the 1990s?</p> <p>21 A I believe I am familiar with that.</p> <p>22 Q Do you know why?</p> <p>23 A No.</p> <p>24 Q Do you know that dusting diaphragms,</p>

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<p style="text-align: right;">Page 190</p> <p>1 the practice of dusting diaphragms with talcum 2 powder was abandoned approximately the same time? 3 MS. CURRY: 4 Object to the form. 5 A Yes. 6 MS. THOMPSON: 7 Q Do you know why? 8 A No. 9 Q Was it for concerns about inflammatory 10 and cancer effects? 11 MS. CURRY: 12 Object to the form. 13 A Could have been. I don't -- can't 14 quote that. 15 MS. THOMPSON: 16 Q Were you aware that FDA banned -- has 17 banned powder examination and surgical gloves? 18 A Yes. 19 Q Do you know why? 20 A That was based upon the concern about 21 the generation of fibrosis. 22 Q And other inflammatory processes in 23 the -- in the peritoneal cavity? 24 MS. CURRY:</p>	<p style="text-align: right;">Page 192</p> <p>1 Q Are you aware of the differences 2 between cornstarch and talc? 3 MS. CURRY: 4 Object to the form. 5 A In terms of biochemical and physical 6 differences? 7 MS. THOMPSON: 8 Q Sure. Let's start there. 9 A Yeah. I don't think I can list them 10 all. But certainly cornstarch is a biologic 11 agent, it's a carbohydrate, and talc is a 12 mineral. 13 We've already talked a little bit about 14 the size of particles in talcum powder and it's 15 exceedingly variable. So it's a little hard to 16 compare those two particles. But I would think 17 that starch would be more homogeneous and of a 18 different size. 19 And then, you know, biochemical 20 differences are substantial. I mean, this is a 21 carbohydrate, which can be broken down by certain 22 enzymes, has, you know, a firm structure to it. 23 Talc, as a mineral, forms suspensions. 24 It is not soluble. Starch is more soluble. So</p>
<p style="text-align: right;">Page 191</p> <p>1 Object to the form. 2 A I would define -- I would define that 3 as fibrosis, if not inflammatory. 4 MS. THOMPSON: 5 Q Do you consider granulomas an 6 inflammatory response? 7 A It's in the characterization of chronic 8 inflammation, yes. 9 Q Are adhesions an inflammatory response? 10 A Not necessarily. 11 Q And they would be an acute response 12 if -- if they were caused by an inflammatory 13 reaction? 14 MS. CURRY: 15 Object to the form. 16 A So adhesions are, you know, essentially 17 scar tissue and fibrosis. The etiology of it is 18 pretty broad. Some of it could be chronic 19 inflammation. Some of it could be acute 20 inflammation. And I would not even rule out the 21 possibility that general wound healing would give 22 rise to scar tissue. And that may not 23 necessarily fit the criteria of inflammation. 24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 193</p> <p>1 there's differences. 2 Q So, in general terms, cornstarch would 3 typically be absorbed or metabolized by the body? 4 MS. CURRY: 5 Object to the form. 6 MS. THOMPSON: 7 Q Would you agree? 8 A Absorbed or -- there's -- it would 9 certainly be more likely, I think, than a 10 mineral, yeah. 11 Q Whereas the mineral, once it's there, 12 is expected to remain there; correct? 13 MS. CURRY: 14 Object to the form. 15 A It's a little hard to tell because then 16 there are other mechanisms remove particulate 17 matters; right? So macrophages come along and 18 they phagocytize them. That macrophage then may 19 travel somewhere else and then essentially 20 deposit it in a way that the mineral -- the 21 mineral particle could be removed. So -- so it's 22 a little bit complex. 23 MS. THOMPSON: 24 Q Can inhaled talc particles appear in</p>

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<p>1 distant organs?</p> <p>2 A So there is some data, I believe, in</p> <p>3 animal studies that high concentrations of talc,</p> <p>4 either in the pleural cavity or in intratracheal</p> <p>5 injections can end up in what --</p> <p>6 And I think I put them in the expert</p> <p>7 report; for instance, the spleen.</p> <p>8 Q And ovaries? Can they occur in the</p> <p>9 ovaries?</p> <p>10 A So if you look at the literature -- you</p> <p>11 know, and I went through in pretty big detail --</p> <p>12 nobody's looked. So there's no reproductive</p> <p>13 organs in any of those studies. At least the</p> <p>14 ones that I have looked at. So I don't think we</p> <p>15 know, and I don't think we could assume that.</p> <p>16 Q Can talc fibers enter the peritoneal</p> <p>17 cavity?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Again, we're back to this mineral</p> <p>21 structure, and I'm not going to be able to</p> <p>22 comment on that.</p> <p>23 MS. THOMPSON:</p> <p>24 Q And how about asbestos fibers?</p>	<p>1 know that.</p> <p>2 Q So you know -- you -- we know that</p> <p>3 asbestos fibers can reach the peritoneal cavity;</p> <p>4 correct?</p> <p>5 A Yes.</p> <p>6 Q And -- and let me just understand</p> <p>7 you -- what you're opining today is that we just</p> <p>8 don't know how they get there?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I don't know. So -- so I think one of</p> <p>12 the hypotheses that -- after asbestos -- again,</p> <p>13 I'm not -- I wasn't asked to explore asbestos in</p> <p>14 great detail. This is more my medical training</p> <p>15 speaking.</p> <p>16 But as people inhaled asbestos, these</p> <p>17 particles would work their way out into the</p> <p>18 pleural cavity --</p> <p>19 MS. THOMPSON:</p> <p>20 Q So --</p> <p>21 A -- which is where they would do their</p> <p>22 badness. And then, there is a hypothesis</p> <p>23 connection between the pleural cavity and the</p> <p>24 peritoneal cavity.</p>
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<p>1 A Well, asbestos exposure can, of course,</p> <p>2 give rise to mesothelioma and can give rise to</p> <p>3 peritoneal mesotheliomas. So it's got to get</p> <p>4 there from somewhere.</p> <p>5 Q Do you have an opinion as to whether</p> <p>6 asbestos fibers can get to the peritoneal cavity</p> <p>7 through peritoneal exposure and migration through</p> <p>8 the genital tract?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I don't have any data on that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q So you have no opinion.</p> <p>14 A I would say analogous with the</p> <p>15 migration data that there's not a lot of evidence</p> <p>16 things are migrating retrograde. So -- and I</p> <p>17 think -- although I don't think those experiments</p> <p>18 have been done with asbestos in mind -- and we</p> <p>19 know that asbestos can travel with high</p> <p>20 insulation [sic] -- you know, inhalation of</p> <p>21 asbestos can get in the pleural cavity. It gets</p> <p>22 there from somewhere. It's got to be inside the</p> <p>23 lung. It has to get out in the pleural cavity,</p> <p>24 and then again, the peritoneal cavity. So we</p>	<p>1 Q So direct penetration of the fiber</p> <p>2 through the pleura?</p> <p>3 A The diaphragm's are pretty secure</p> <p>4 structures, so it's a little bit -- I can't say,</p> <p>5 hey, here's the pathway. But that's the</p> <p>6 supposition.</p> <p>7 Q Okay.</p> <p>8 A Okay.</p> <p>9 Q Do you -- are you aware of any</p> <p>10 epidemiologic or other studies that have linked</p> <p>11 the use of perineal cornstarch with ovarian</p> <p>12 cancer?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Perineal cornstarch with ovarian</p> <p>16 cancer?</p> <p>17 MS. THOMPSON:</p> <p>18 Q Correct. Let me phrase that</p> <p>19 differently just so it's clear.</p> <p>20 A Okay.</p> <p>21 Q Are you aware of any studies that link</p> <p>22 the perineal use of cornstarch products with</p> <p>23 ovarian cancer?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Therapeutically or just accidentally?</p> <p>3 MS. THOMPSON:</p> <p>4 Q Um -- as a substitute for talcum</p> <p>5 powder. If a woman is using corn -- a</p> <p>6 cornstarch-based perineal dusting powder, are you</p> <p>7 aware of any studies that have linked that usage</p> <p>8 to ovarian cancer?</p> <p>9 A Not that I -- no.</p> <p>10 Q Do you agree that -- I might go ahead</p> <p>11 and go back to that -- that -- the FDA, mark it</p> <p>12 as --</p> <p>13 A The letter?</p> <p>14 Q The letter.</p> <p>15 I know. But I don't have my stickers.</p> <p>16 MS. THOMPSON:</p> <p>17 My fault; not yours.</p> <p>18 THE COURT REPORTER:</p> <p>19 Okay.</p> <p>20 MS. THOMPSON:</p> <p>21 Shall we do another few just to get us</p> <p>22 to lunch?</p> <p>23 THE COURT REPORTER:</p> <p>24 I forget what number we're on.</p>	<p>1 summary on the following page, one, purpose and</p> <p>2 coverage of the final rule, and the last</p> <p>3 paragraph -- or the last sentence of the first</p> <p>4 paragraph says, "However, the use of powder on</p> <p>5 medical gloves presents numerous risks to</p> <p>6 patients and healthcare workers, including</p> <p>7 inflammation, granulomas and respiratory allergic</p> <p>8 reaction."</p> <p>9 Does that at least state what the FDA</p> <p>10 considers the reasons for the removal of talcum</p> <p>11 powder from surgical gloves?</p> <p>12 A Yes, it does.</p> <p>13 Q Are you aware that Health Canada</p> <p>14 determined that the migration of talc particles</p> <p>15 to the ovaries from perineal use was a plausible</p> <p>16 or is a plausible mechanism for the detection of</p> <p>17 talc in the ovaries?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I believe they did. You're --</p> <p>21 MS. THOMPSON:</p> <p>22 Q And you -- do you disagree with the</p> <p>23 determination that Health Canada reached</p> <p>24 regarding the -- the migration of talc particles</p>
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<p>1 MS. THOMPSON:</p> <p>2 We're on --</p> <p>3 MS. EVERETT:</p> <p>4 14.</p> <p>5 MS. THOMPSON:</p> <p>6 14.</p> <p>7 (DEPOSITION NUMBER 14 WAS</p> <p>8 MARKED FOR IDENTIFICATION.)</p> <p>9 MS. THOMPSON:</p> <p>10 Q I'm going to go ahead and mark the FDA</p> <p>11 announcement on the banning of -- of talcum</p> <p>12 powder just so we can see what they actually did</p> <p>13 say about the reasons.</p> <p>14 And --</p> <p>15 A This is for gloves. For gloves.</p> <p>16 Surgical gloves.</p> <p>17 Q Examination and surgical gloves.</p> <p>18 A Yeah.</p> <p>19 Q And just in the bottom part of the</p> <p>20 right-hand side of the first page, "Banned</p> <p>21 Devices; Powdered Surgeon's Gloves, Powdered</p> <p>22 Patient Examination Gloves, and Absorbable Powder</p> <p>23 For Lubricating on a Surgeon's Glove."</p> <p>24 And if you'll turn to the executive</p>	<p>1 to the ovaries being a plausible mechanism for</p> <p>2 the detection of talc in ovaries?</p> <p>3 A Yes, I do.</p> <p>4 Q In your report, you state that the</p> <p>5 migration is contrary to basic anatomy and common</p> <p>6 sense, I believe.</p> <p>7 Do you still hold that opinion?</p> <p>8 A Where are you reading? Back to my</p> <p>9 report?</p> <p>10 Q I have to get your report out.</p> <p>11 A Yeah. That's get that out there.</p> <p>12 Q His expert report.</p> <p>13 And in the -- under "Migration" on page</p> <p>14 5, "Supposed Presence of Talc in Ovaries."</p> <p>15 A Ah. Okay. Yep.</p> <p>16 Q And Health Canada's conclusion was that</p> <p>17 the migration of talc particles to the ovaries</p> <p>18 from perineal use is a plausible mechanism for</p> <p>19 the detection of talc to the ovaries.</p> <p>20 But at least your opinion is that the</p> <p>21 presence of talc in the ovaries cannot be</p> <p>22 explained by migration. Is that right?</p> <p>23 A Well, the studies that I looked at here</p> <p>24 mostly are the presence of talc in cancer of the</p>

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<p>1 ovary, and there were some control patients, I</p> <p>2 believe, with breast cancer where they looked at</p> <p>3 the ovary.</p> <p>4 And these -- these studies have been</p> <p>5 around for a while. I've reviewed them multiple</p> <p>6 times, and they're just seriously flawed, from my</p> <p>7 perspective. So I don't know that you can</p> <p>8 conclude that. But these are -- these are just</p> <p>9 the studies that show the presence of talc in</p> <p>10 specimens. It's not the next line of evidence,</p> <p>11 which is actual variety of human -- human</p> <p>12 experiments, if you will, which are also</p> <p>13 seriously flawed.</p> <p>14 So, you know, I essentially reviewed</p> <p>15 all of that and came to the conclusion you can't</p> <p>16 conclude anything. There's no convincing data.</p> <p>17 Health Canada came to a different conclusion.</p> <p>18 Q And is that because Health Canada got</p> <p>19 it wrong again, or is that because scientists can</p> <p>20 come to different conclusions when reviewing the</p> <p>21 same data?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Based on my review on this, they got it</p>	<p>1 A I think they were mystified and they</p> <p>2 tried to argue that the reason why they found</p> <p>3 talc in everybody --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Dr. Birrer, sorry.</p> <p>6 My question was: Do you know what the</p> <p>7 authors concluded?</p> <p>8 A I'm saying it.</p> <p>9 Q That's "yes" or "no."</p> <p>10 A Oh.</p> <p>11 Q Do you know what the authors concluded?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Yes.</p> <p>15 MS. THOMPSON:</p> <p>16 Q What did the authors conclude?</p> <p>17 A So I think they were mystified. And</p> <p>18 so --</p> <p>19 Q No. Did the authors -- where do you</p> <p>20 see in the paper that the authors were mystified?</p> <p>21 A Because --</p> <p>22 MS. CURRY:</p> <p>23 Let him finish and don't cut him off.</p> <p>24 MS. THOMPSON:</p>
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<p>1 wrong.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Regarding the Heller paper --</p> <p>4 A Uh-huh.</p> <p>5 Q -- let's just go back to your report.</p> <p>6 Do you know what the Heller authors</p> <p>7 concluded from their study?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Do you --</p> <p>11 MS. THOMPSON:</p> <p>12 Q This is the paper regarding the talc</p> <p>13 presence in --</p> <p>14 A Right.</p> <p>15 Q -- ovaries from the Heller paper.</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A So just to summarize real quick --</p> <p>19 MS. THOMPSON:</p> <p>20 Q No. Not asking that question.</p> <p>21 Do you know what the Heller authors</p> <p>22 concluded on the basis of their study?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 Not when he's not answering my</p> <p>2 question.</p> <p>3 THE WITNESS:</p> <p>4 Well, I --</p> <p>5 MS. CURRY:</p> <p>6 He's trying to answer it. You keep</p> <p>7 cutting him off at every word.</p> <p>8 MS. THOMPSON:</p> <p>9 I asked where in the paper did the</p> <p>10 authors say they were mystified, and he needs to</p> <p>11 explain that.</p> <p>12 MS. CURRY:</p> <p>13 You haven't even marked the paper. You</p> <p>14 are asking him based on his expert report, and</p> <p>15 he's --</p> <p>16 MS. THOMPSON:</p> <p>17 I didn't ask him on the basis of his</p> <p>18 expert report. I asked him on the basis of his</p> <p>19 knowledge.</p> <p>20 I'll mark the Heller paper 15.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 15 WAS</p> <p>22 MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 Q Do you see anywhere in the paper that</p>

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<p>1 the authors were mystified? Yes or no?</p> <p>2 A I think they were confused by the lack</p> <p>3 of association.</p> <p>4 Q Do you see where the authors were</p> <p>5 mystified?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q There's nowhere where the authors say</p> <p>10 they were mystified, is there, Dr. Birrer?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 MS. THOMPSON:</p> <p>14 Q I'll withdraw the question.</p> <p>15 A Okay.</p> <p>16 Q Let's just go to the conclusions.</p> <p>17 "Conclusions: The detection of talc in</p> <p>18 all ovaries demonstrates that it can reach the</p> <p>19 upper genital tract."</p> <p>20 Is that what the authors of the Heller</p> <p>21 paper conclude?</p> <p>22 A Yes.</p> <p>23 Q And yet you're critical of the</p> <p>24 plaintiffs' experts because they conclude the</p>	<p>1 Q Is that your opinion?</p> <p>2 A Say that again.</p> <p>3 Q It's not that scientists can come to</p> <p>4 different conclusions. It's that the 12 experts</p> <p>5 who state the same conclusions as the authors of</p> <p>6 the paper are wrong and you're right?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Is that a correct statement?</p> <p>11 A Correct.</p> <p>12 Q One of your criticisms of the Cramer</p> <p>13 paper from 2007 that detected talc in lymph nodes</p> <p>14 was that it was a case report; correct?</p> <p>15 A Correct.</p> <p>16 Q And you've published with Dr. Cramer;</p> <p>17 correct?</p> <p>18 A I don't think I'm on papers with</p> <p>19 Dr. Cramer.</p> <p>20 Q And have you seen the paper that was</p> <p>21 published recently of a series of cases in which</p> <p>22 talc was detected in the lymph nodes?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>
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<p>1 same thing that the authors of the paper</p> <p>2 conclude; right?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q In fact, I -- well, go ahead and</p> <p>7 answer.</p> <p>8 A Well, I'm critical of the paper and the</p> <p>9 experts who agreed with it.</p> <p>10 Q And I -- I think there were no fewer</p> <p>11 than 12 experts that you think were wrong on</p> <p>12 this; right?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A If that's the number of experts that</p> <p>16 agreed to it, then, yeah. I agree on that.</p> <p>17 MS. THOMPSON:</p> <p>18 Q And it's not that scientists can come</p> <p>19 to different conclusions. It's that 12 experts</p> <p>20 who state the same conclusions as the authors of</p> <p>21 the paper are wrong and you're right?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 MS. THOMPSON:</p>	<p>1 A Do you have an author?</p> <p>2 MS. THOMPSON:</p> <p>3 Q Same authors.</p> <p>4 A So Dr. Cramer --</p> <p>5 Q The lead author is McDonald, but from</p> <p>6 Cramer's lab --</p> <p>7 A I have seen it.</p> <p>8 Q -- and Welch. You've seen it?</p> <p>9 A Uh-huh.</p> <p>10 Q And is it your understanding that the</p> <p>11 authors -- I'll mark the McDonald paper Exhibit</p> <p>12 16.</p> <p>13 (DEPOSITION EXHIBIT NUMBER 16 WAS</p> <p>14 MARKED FOR IDENTIFICATION.)</p> <p>15 MS. THOMPSON:</p> <p>16 Q Is it your understanding that the</p> <p>17 authors specifically controlled for any</p> <p>18 possibility of contamination?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A No. That's not my understanding.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Well, it's in the abstract, if we can</p> <p>24 get -- delve deeper if we need to. The authors</p>

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<p>1 said that since talc can be a surface contaminant</p> <p>2 from tissue collection preparation, digestion</p> <p>3 measurements may be influenced by contamination.</p> <p>4 Instead, because they preserve anatomic landmarks</p> <p>5 and permit identification of particles in cells</p> <p>6 and tissues polarized light microscopy and in</p> <p>7 situ SEM-EDX are recommended to assess talc in</p> <p>8 lymph nodes.</p> <p>9 And that's the methodology that the</p> <p>10 authors, the researchers, performed to assure</p> <p>11 themselves that this finding was not due to</p> <p>12 contamination; right?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A You are reading correctly.</p> <p>16 MS. THOMPSON:</p> <p>17 Q I didn't even read that.</p> <p>18 A Oh.</p> <p>19 Q I came up with that --</p> <p>20 A Oh. I thought you were looking at the</p> <p>21 paper.</p> <p>22 Q Well, I must be right, then.</p> <p>23 A I mean, they -- they observe -- I read</p> <p>24 this -- I'll read it. "In conclusion, talc</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A So they -- they observe -- they observe</p> <p>4 large amounts of contamination. They argue that</p> <p>5 with their technology, they can tell whether some</p> <p>6 is surface and some is internal, in lymph nodes.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And they determined that some was</p> <p>9 internal; right?</p> <p>10 A I believe so.</p> <p>11 Q Probably have another, what, five</p> <p>12 minutes and then lunch, or I can do it after we</p> <p>13 come back.</p> <p>14 MS. CURRY:</p> <p>15 Is that okay with you?</p> <p>16 A That's okay.</p> <p>17 MS. CURRY:</p> <p>18 Is that okay with the court reporter?</p> <p>19 THE COURT REPORTER:</p> <p>20 That's fine. Yes.</p> <p>21 THE WITNESS:</p> <p>22 You all right? I'll stop mumbling.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay. I want to go over just a few of</p>
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<p>1 contamination in the surface of surgical</p> <p>2 pathology specimens of is common."</p> <p>3 Q Except -- and I didn't have a question</p> <p>4 on the table.</p> <p>5 A Okay.</p> <p>6 Q So I'll object to that as being</p> <p>7 nonresponsive to a question.</p> <p>8 Except the whole purpose of this study</p> <p>9 was to, number one, expand on the case report</p> <p>10 that was published earlier; right?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I don't see that. It's another study.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Okay.</p> <p>16 A Yeah.</p> <p>17 Q But this had a series of 22 cases;</p> <p>18 right?</p> <p>19 A Twenty-two cases, correct.</p> <p>20 Q And -- and the authors concluded that</p> <p>21 by -- by using the techniques that they used in</p> <p>22 this pap- -- in this paper, they could confirm</p> <p>23 that the -- the talc in the lymph nodes was not</p> <p>24 surface contamination. Right?</p>	<p>1 your criticisms of plaintiffs' experts. And</p> <p>2 let's start with Dr. Clarke-Pearson. I believe</p> <p>3 that you have met Dr. Clarke-Pearson and know him</p> <p>4 by reputation, at least; correct?</p> <p>5 A I have.</p> <p>6 Q He's a past president, I believe, of</p> <p>7 SGO; correct?</p> <p>8 A Correct.</p> <p>9 Q And department chair at University of</p> <p>10 North Carolina, recently retired; correct?</p> <p>11 A Correct.</p> <p>12 Q And -- and you actually wrote the</p> <p>13 criticism here of Dr. Clarke-Pearson?</p> <p>14 A Correct.</p> <p>15 Q And that's your language?</p> <p>16 A Uh-huh.</p> <p>17 Q Okay. Let's just read through that.</p> <p>18 "Dr. Clarke-Pearson analogizes to the migration</p> <p>19 of sperm" -- and this is considering the</p> <p>20 migration of talc particles -- "into tubes after</p> <p>21 coitus. It is rather surprising to hear this</p> <p>22 from a gynecological oncologist."</p> <p>23 Did you look at Dr. Clarke-Pearson's</p> <p>24 references?</p>

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<p>1 A I looked at his expert report.</p> <p>2 Q Including his references?</p> <p>3 A I probably would have paged through it,</p> <p>4 yeah. Yep.</p> <p>5 Q "The obvious difficulty with this line</p> <p>6 of reasoning is the fact that spermatozoa are</p> <p>7 motile and have evolved under millions of years</p> <p>8 to be able to migrate under their own control to</p> <p>9 increase the potential to fertilize the egg.</p> <p>10 This mode of transport is not consistent with a</p> <p>11 talc particle."</p> <p>12 Did you look at Dr. Pearson's citation</p> <p>13 that describes the movement of dead sperm and</p> <p>14 talc particles through that upper genital tract?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Yeah. I didn't see the -- I didn't see</p> <p>18 the reference on dead sperm. But --</p> <p>19 MS. THOMPSON:</p> <p>20 Q If -- if there was a reference that</p> <p>21 dead sperm moved through and moved through quite</p> <p>22 easily, then your statement that it's not</p> <p>23 analogous because spermatozoa are motile is</p> <p>24 incorrect, isn't it?</p>	<p>1 A Are they dead dead or --</p> <p>2 Q Do you think dead sperm may be motile?</p> <p>3 Do you know any -- too much about reproductive</p> <p>4 physiology?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A A fair amount, yeah.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And you don't know whether dead sperm</p> <p>10 would be motile or not?</p> <p>11 A So how are you defining that?</p> <p>12 They're -- they're -- they've decayed? They're</p> <p>13 broken down --</p> <p>14 Q Yes.</p> <p>15 A -- or the flagella is not moving?</p> <p>16 Q The flagella is not moving in a dead</p> <p>17 sperm.</p> <p>18 A Okay.</p> <p>19 Q Is it?</p> <p>20 A I guess as you are specifically</p> <p>21 defining --</p> <p>22 Q Are you arguing me -- with me?</p> <p>23 A Can I answer?</p> <p>24 MS. CURRY:</p>
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<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Well, I have to see the paper, and I</p> <p>4 don't know the details.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Assume with me that there is evidence</p> <p>7 published in the peer-reviewed literature that</p> <p>8 dead sperm and sperm particles move through the</p> <p>9 upper genital tract, then your statement that</p> <p>10 it's not analogous because spermatozoa are motile</p> <p>11 would be incorrect; right?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A So these sperm would be put on the</p> <p>15 perineum like a dusting?</p> <p>16 MS. THOMPSON:</p> <p>17 Q No.</p> <p>18 A Okay.</p> <p>19 Q I'm just saying it's -- your statement</p> <p>20 that that is the reason would be incorrect.</p> <p>21 A I -- so --</p> <p>22 Q Are -- are dead sperm motile?</p> <p>23 A I don't actually know. They --</p> <p>24 Q You're --</p>	<p>1 I'm sorry. You can each just take</p> <p>2 turns. Just please let her get her question out.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Do you not know whether dead sperm</p> <p>5 would be motile or not?</p> <p>6 A I would think most of the time they</p> <p>7 would not be motile.</p> <p>8 Q Okay. And would you agree that a sperm</p> <p>9 particle -- for example, if the flagellum is</p> <p>10 broken off, would you agree that would not be</p> <p>11 motile, a sperm particle?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Motile, moving under its own --</p> <p>15 MS. THOMPSON:</p> <p>16 Q Moving on its own.</p> <p>17 A Yeah. I think it's unlikely.</p> <p>18 Q Do you know the size of the head of a</p> <p>19 sperm?</p> <p>20 A No.</p> <p>21 Q If the reason that Dr. Clarke-Pearson</p> <p>22 was incorrect referencing dead and -- dead sperm</p> <p>23 and sperm particles moving through the upper</p> <p>24 genital tract could be relevant to a talc</p>

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<p>1 particle. If your reason for saying that opinion 2 is incorrect is that sperm are motile, then that 3 reasoning is incorrect, isn't it? 4 MS. CURRY: 5 Object to the form. 6 A Well, I think in the way it's expressed 7 here, that, obviously, it doesn't mean -- I mean, 8 it makes no sense to apply to spermatozoa, which 9 are mobile. But if you're telling me there's a 10 reference for dead sperm, then the question 11 becomes what's in that reference? So these -- 12 MS. THOMPSON: 13 Q Okay. 14 A -- dead sperm were deposited into the 15 uterus after coitus and -- 16 Q We're just talking -- we're not talking 17 about coitus. 18 Is it plausible to you -- 19 A Okay. 20 Q -- that a woman who has talcum on her 21 perineum -- 22 A Uh-huh. 23 Q -- could have coitus and the talcum 24 powder on the perineum could be placed in the</p>	<p>1 Object to the form. 2 A Yeah, I don't know what -- 3 MS. THOMPSON: 4 Q Those are your words. Are 5 Dr. Clarke-Pearson's opinions contrary to 6 knowledge of basic anatomy? 7 MS. CURRY: 8 Object to the form. 9 A Where are you reading? 10 MS. THOMPSON: 11 Q Well, for right now I was just in the 12 first paragraph of "Hypothesized migration of 13 talc to ovaries." 14 A What page? Is it on my report? 15 Q Page 7. 16 A Okay. 17 Oh. So you're relating that statement 18 to Clarke-Pearson? 19 Q Well, I believe you say that all the 20 experts have -- have a theory that's contrary to 21 basic anatomy and common sense. 22 A No. What that refers to, I think, is 23 the fact that you're putting -- you're dusting 24 the perineum many times, most of the times, in a</p>
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<p>1 vagina forcefully? Is that plausible? 2 A I don't have any data on that. 3 Q Do you have to have data to say whether 4 or not that's plausible? 5 A I am a scientist. 6 Q Well, maybe take off your scientist 7 hat. Is it plausible that a woman who has talcum 8 powder on her perineum and has sex, that the 9 talcum powder could be forced into the vagina? 10 MS. CURRY: 11 Object to the form. 12 MS. THOMPSON: 13 Q Is it plausible? 14 A Sexual intercourse? 15 Q Sexual intercourse, yes. 16 A Yes. Just getting specifics. 17 Yeah. I mean, I -- I think the way 18 you're hypothesizing it, I suppose there's a 19 possibility. 20 Q So if those things are possible and 21 plausible, then you really don't think 22 Dr. Clarke-Pearson's opinions are unreasonable 23 and -- and are contrary to basic anatomy, do you? 24 MS. CURRY:</p>	<p>1 woman who's vertical, and this concept is that 2 somehow that talc and dust essentially ascends 3 into the ovary. And I think that more often than 4 not lacks common sense and basic anatomy because 5 of what I just said. 6 Now, if you want to go through each 7 individual study, I'm happy to do that because 8 there are methodologic flaws in them. But that 9 statement does not relate directly to 10 Dr. Clarke-Pearson. If it did, it would be under 11 his name. 12 Q But you talk generally about 13 plaintiffs' experts, too. And do you think that 14 you have a better understanding of female anatomy 15 than Dr. Clarke-Pearson? 16 MS. CURRY: 17 Object to the form. 18 A Dr. Clarke-Pearson's pretty good with 19 female anatomy. 20 MS. THOMPSON: 21 Q Do you think you have a better 22 understanding than Dr. Clarke-Pearson of female 23 reproductive physiology? 24 MS. CURRY:</p>

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<p style="text-align: right;">Page 222</p> <p>1 Object to the form.</p> <p>2 A No. I think he would be more versed in</p> <p>3 that.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And -- and you've just testified that</p> <p>6 we're not just talking about a woman standing up</p> <p>7 and putting dusting powder and the ascension. We</p> <p>8 are talking about the possibility, in your words,</p> <p>9 that powder could be on the perineum and</p> <p>10 introduced in the vagina forcefully with sexual</p> <p>11 intercourse; right?</p> <p>12 A Well, yes --</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A We just had that conversation. I mean,</p> <p>16 again, it's hypothetical. Yeah.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Okay. Agreed. I mean, I agree that's</p> <p>19 your opinion.</p> <p>20 And how about a woman who applies</p> <p>21 talcum powder to a sanitary napkin? Is it</p> <p>22 possible that the talcum powder would be</p> <p>23 introduced in the vagina through menstrual flow?</p> <p>24 A Through menstrual --</p>	<p style="text-align: right;">Page 224</p> <p>1 Q Do you think he would know it, what's</p> <p>2 published in literature?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A He might.</p> <p>6 MS. THOMPSON:</p> <p>7 Q So you're certainly not opining today</p> <p>8 that you have a better understanding than</p> <p>9 Dr. Clarke-Pearson of materials that can travel</p> <p>10 retrograde through the upper genital tract, do</p> <p>11 you?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Oh, I disagree with that.</p> <p>15 MS. THOMPSON:</p> <p>16 Q You think you do have a better</p> <p>17 understanding than Dr. Clarke-Pearson regarding</p> <p>18 whether or not particles can travel through the</p> <p>19 upper genital tract?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Based upon my analysis of these papers,</p> <p>23 yes.</p> <p>24 MS. THOMPSON:</p>
<p style="text-align: right;">Page 223</p> <p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Not that I know of. I don't have any</p> <p>4 data for that.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Is that -- you don't think it's</p> <p>7 possible?</p> <p>8 A Again, from -- from -- it's</p> <p>9 interesting. So if menstrual flow coming out of</p> <p>10 the vagina with a sanitary napkin, the talc then</p> <p>11 gets into the vagina up to the ovaries. It</p> <p>12 doesn't make a lot of sense to me.</p> <p>13 Q What percentage of women have</p> <p>14 retrograde menstruation on a -- on a given</p> <p>15 period?</p> <p>16 A I don't understand what you mean by</p> <p>17 that.</p> <p>18 Q Do you think Dr. Clarke-Pearson</p> <p>19 probably knows that percentage?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I'm sure he'd probably have an opinion</p> <p>23 on it.</p> <p>24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 225</p> <p>1 Q Well, you certainly didn't know about</p> <p>2 dead sperm and sperm particles, did you?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Well, it's one paper.</p> <p>6 MS. THOMPSON:</p> <p>7 Q And you don't know about -- you don't</p> <p>8 know how many -- what percentage of women have</p> <p>9 retrograde menstruation, which is a classic paper</p> <p>10 in gynecology -- gynecology? You don't know that</p> <p>11 percentage, do you?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I can't quote you that percentage.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Do you know that women oftentimes use</p> <p>17 baby powder at bedtime?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I guess that's possible.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And that would not be in an upright</p> <p>23 position, would it?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A They may have put it on in an upright</p> <p>3 position.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And do you agree that women could have</p> <p>6 powder on the perineum and use a tampon?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A I assume that's possible, yes.</p> <p>10 MS. THOMPSON:</p> <p>11 Q And wouldn't it be possible that powder</p> <p>12 on a tampon could be introduced into the vagina?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A It's possible.</p> <p>16 MS. THOMPSON:</p> <p>17 Q And what -- what did Dr. Kunz, K-U-N-Z,</p> <p>18 describe in an article regarding how particles</p> <p>19 and substances are transported to the upper</p> <p>20 genital tract?</p> <p>21 A So that's the peristaltic pump.</p> <p>22 Q And describe that for me.</p> <p>23 A Yeah. So they went and looked at the</p> <p>24 contractions -- they, first of all, tried to</p>	<p>1 Object to the form.</p> <p>2 A Yeah.</p> <p>3 The problem I have with that is I'm not</p> <p>4 sure what direction the pressure is in, because</p> <p>5 obviously if you give oxytocin at the time of</p> <p>6 pregnancy after the delivery, expels the</p> <p>7 placenta, so some of that pressure's going to</p> <p>8 come down.</p> <p>9 And, then, too, the radioactive studies</p> <p>10 are really problematic because a lot of times the</p> <p>11 label will come off of the microsphere. So you</p> <p>12 don't quite know where it's going.</p> <p>13 MS. THOMPSON:</p> <p>14 Q At what points in a female's -- in a</p> <p>15 woman's cycle are oxytocin levels the highest?</p> <p>16 A I can't quote you that.</p> <p>17 Q Would that be a question for</p> <p>18 Dr. Clarke-Pearson?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A He probably would know.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And are you aware of the studies</p> <p>24 showing that not only sperm particles and dead</p>
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<p>1 measure the pressure in the uterus based on this</p> <p>2 contraction, and they used actually ultrasound to</p> <p>3 do it, which is an indirect measure, of course.</p> <p>4 Don't know really what the pressure is.</p> <p>5 Based upon finding that, then they went</p> <p>6 on to, if I recall correctly, use micro- --</p> <p>7 radiolabeled microspheres to do -- a word I can't</p> <p>8 pronounce -- hysterosalpingoscintigraphy,</p> <p>9 whatever.</p> <p>10 Q I can't either.</p> <p>11 A Yeah. And the idea was -- if I recall</p> <p>12 correctly, the idea of that whole study was</p> <p>13 actually for -- I think fertility and pregnancy.</p> <p>14 And the idea was that they then saw this</p> <p>15 radioactivity up in the areas and drew the</p> <p>16 conclusion that there is contraction to the</p> <p>17 uterus and that they were hypothesizing that the</p> <p>18 particles then were going up the tubes of the</p> <p>19 ovaries.</p> <p>20 Q So it facilitates movement through</p> <p>21 the --</p> <p>22 A Yeah.</p> <p>23 Q -- genital tract?</p> <p>24 MS. CURRY:</p>	<p>1 sperm move through the upper genital tract but</p> <p>2 even motile sperm move at a much faster rate than</p> <p>3 would be predicted strictly based on their</p> <p>4 self-generated motility?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Yeah. I actually recall seeing that in</p> <p>8 a study.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Are you aware that motile sperm</p> <p>11 preferentially go to the side where ovulation has</p> <p>12 occurred?</p> <p>13 A That, I'm not -- I can't quote you</p> <p>14 that. I don't know.</p> <p>15 Q So that would probably be another</p> <p>16 question for one of the gynecologists or --</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 MS. THOMPSON:</p> <p>20 Q -- gynecologic oncologists? Would you</p> <p>21 agree?</p> <p>22 A They -- they would have that, and their</p> <p>23 OB training would provide them with that</p> <p>24 information. Yeah.</p>

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<p>1 Q Let's break for lunch.</p> <p>2 VIDEOGRAPHER:</p> <p>3 Off the record at 12:55 p.m.</p> <p>4 (Lunch recess.)</p> <p>5 VIDEOGRAPHER:</p> <p>6 We're back on the record at 2:02 p.m.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Dr. Birrer, I think we established this</p> <p>9 morning that it is your opinion that the genital</p> <p>10 use of talcum powder is not a risk factor for</p> <p>11 ovarian cancer; right?</p> <p>12 A I'm sorry. Say that -- say that again.</p> <p>13 Q It's your opinion that talcum powder is</p> <p>14 not a risk factor for ovarian cancer; right?</p> <p>15 A The use of talcum powder?</p> <p>16 Q Yes.</p> <p>17 A Correct.</p> <p>18 Q Can you point me to any article -- can</p> <p>19 you point me to an article that specifically</p> <p>20 states genital talcum powder use is not a risk</p> <p>21 factor for -- for ovarian cancer?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A That genital talcum powder use is not a</p>	<p>1 study?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A No. I'd have to go through them. Do</p> <p>5 you have them?</p> <p>6 MS. THOMPSON:</p> <p>7 Q We're not gonna go through the 40</p> <p>8 studies, but --</p> <p>9 At least sitting here today, you can't</p> <p>10 think of one right offhand, can you?</p> <p>11 A I'm happy to go through the studies.</p> <p>12 Q Okay. Is it your opinion that genital</p> <p>13 talcum powder use has been proven to be a safe</p> <p>14 practice?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A We discussed that this morning. There</p> <p>18 is no data I know that it's an unsafe practice.</p> <p>19 That's a review of the literature. And, so,</p> <p>20 it's -- I think in that context it's safe.</p> <p>21 MS. THOMPSON:</p> <p>22 Q In your previous -- or did you look at</p> <p>23 websites when you prepared your report this time</p> <p>24 regarding talcum powder exposure and the risk for</p>
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<p>1 risk factor? I mean, if you look at the -- a lot</p> <p>2 of the case-control studies, about 40 percent of</p> <p>3 them are negative and --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Well -- and by negative, you mean not</p> <p>6 statistically significant; right?</p> <p>7 A (Nods affirmatively.) Negative. And</p> <p>8 cohort studies aren't either. And -- and,</p> <p>9 actually, that -- and the cohort studies have</p> <p>10 been sort of analyzed, reanalyzed in multiple</p> <p>11 meta-analysis, and so they're all negative.</p> <p>12 Q But my question was: Did any of those</p> <p>13 studies conclude talcum powder is not a risk</p> <p>14 factor for ovarian cancer?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So there are studies that don't show a</p> <p>18 significant association between talcum use and --</p> <p>19 MS. THOMPSON:</p> <p>20 Q But I'm looking for --</p> <p>21 A -- and ovarian cancer.</p> <p>22 Q -- the statement that genital use of</p> <p>23 talcum is not a risk factor for ovarian cancer.</p> <p>24 Do you remember seeing that in any</p>	<p>1 ovarian cancer?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Other than PubMed?</p> <p>5 MS. THOMPSON:</p> <p>6 Q Right.</p> <p>7 Like the American Cancer Society or NCI</p> <p>8 or any websites.</p> <p>9 A Not for this one.</p> <p>10 Q Had you looked at them before?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I think in the previous depositions, I</p> <p>14 reported looking at one or two of them. I'd have</p> <p>15 to go back and look at that.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Okay.</p> <p>18 A Yeah.</p> <p>19 Q And I think the American Cancer Society</p> <p>20 website was one of those that you looked at.</p> <p>21 Correct?</p> <p>22 A Could be.</p> <p>23 Q I'll mark 17, American Cancer Society,</p> <p>24 Talcum Powder and Cancer.</p>

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<p>1 (DEPOSITION EXHIBIT NUMBER 17 2 WAS MARKED FOR IDENTIFICATION.) 3 MS. THOMPSON: 4 Q Does that look familiar? 5 A That looks like American Cancer 6 Society's website. Because I see the logo. 7 Q And -- and would you use this statement 8 on the American Cancer Society website to be 9 support for your opinion that talcum powder use 10 is not a risk factor for ovarian cancer? 11 A Is not a risk factor? Is not? 12 Q Is not. 13 A I wouldn't refer to this, no. 14 Q Do you think that's what this document 15 states? 16 A I don't think this -- it doesn't seem 17 to me, based on what the ACS is saying -- they 18 report that their findings are mixed, with some 19 studies reporting a slightly increased risk and 20 some reporting no increase. 21 Q So the American Cancer Society, on 22 their website, states that IARC has classified 23 talc that contains asbestos as carcinogenic to 24 humans; right?</p>	<p>1 talcum powder does not increase risk, are they? 2 MS. CURRY: 3 Object to the form. 4 A Say again. 5 MS. THOMPSON: 6 Q They're not saying that talcum powder 7 use does not increase cancer risk, do they? 8 A I don't see that stated. 9 Q And -- and they say there is some 10 suggestion of a possible increase in ovarian 11 cancer risk; right? 12 A Well, the statement I see is "It's not 13 clear if consumer products containing talcum 14 increase cancer risks." That's pretty specific. 15 Q They're saying it's not clear. It's 16 not saying it's not a risk, is it? 17 MS. CURRY: 18 Object to the form. 19 A They're saying they don't know. 20 MS. THOMPSON: 21 Q Right. And then the recommendation, by 22 the American Cancer Society, would be "Until more 23 information is available, people concerned about 24 using talcum powder may want to avoid or limit</p>
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<p>1 A You're on page 3? 2 Q Yeah. 30 -- yeah, 3 of 6. 3 A Yeah. 4 Q And then based on the lack of data from 5 human studies and unlimited data in lab animal 6 studies, IARC classified inhaled talc not 7 containing asbestos as not classifiable; right? 8 A The second bullet? 9 Q The second bullet. 10 And then the third bullet is the IARC 11 that states that the perineal genital use of talc 12 powder -- talc-based body powder is possibly 13 carcinic- -- carcinogenic to humans. That's the 14 2B classification; right? 15 A 2B. 16 Q And then it states that the US National 17 Toxicology Program, NTB, has not fully reviewed 18 talc with or without asbestos as a possible 19 carcinogen; right? That's what it says. 20 A Correct. 21 Q And, then, as -- as you said, the ACS 22 states it's not clear if consumer products 23 containing talcum powder increase cancer risk. 24 They're certainly not saying that</p>	<p>1 their use of consumer products that contain it." 2 But you think any recommendation of 3 that kind is not indicated; correct? 4 MS. CURRY: 5 Object to the form. 6 A Well, it depends on how you read that. 7 I mean, I think what they're suggesting is that 8 people concerned about using talcum powder, for 9 whatever reason, may want to avoid or limit their 10 use of consumer products that contain it and 11 implies that it's the stress of knowing they're 12 using it because of what they've interpreted. It 13 doesn't really make any conclusions about talcum 14 powder. 15 MS. THOMPSON: 16 Q Are there any medical benefits that 17 you're aware of from the genital use of talcum 18 powder? 19 A Well, I think it's generally used to 20 absorb -- absorb fluid. It's -- a lot of women 21 like it. It's a body image issue. You know, so 22 I think those issues -- and again, I treat a lot 23 of women with ovarian cancer -- are important. 24 Q That wasn't my question.</p>

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<p>1 Are there any medical benefits to the 2 genital use of talcum powder? 3 MS. CURRY: 4 Object to the form. 5 A That is a medical use? 6 MS. THOMPSON: 7 Q Are there any benefits, is the 8 question. 9 A Yeah. 10 MS. CURRY: 11 Object to the form. 12 MS. THOMPSON: 13 Q Where are -- where are those benefits 14 reported? 15 A That's quality of life. 16 Q Where in the medical literature can you 17 show a report that describes medical benefits 18 from the genital use of talcum powder? 19 A Well, it's not in -- and again, I 20 didn't review that for this expert report, so -- 21 but you're asking me. 22 Q When you -- if you're trying to make a 23 risk assessment, wouldn't you know if you're 24 weighing the benefits versus the potential risks?</p>	<p>1 A Again, you asked me the question about 2 do I think there's some medical benefit. I -- 3 the answer is yes. I mean -- 4 MS. THOMPSON: 5 Q But that's never been published 6 anywhere that you're aware of, has it? 7 MS. CURRY: 8 Object to the form. 9 A As I said before, I -- I can't quote 10 you that. 11 MS. THOMPSON: 12 Q Is it -- have you seen in the medical 13 literature that there are no benefits, medical 14 benefits from the use of talcum powder in the 15 genital area? 16 MS. CURRY: 17 Object to the form. 18 A I don't think I've actually seen that. 19 MS. THOMPSON: 20 Q Would you be surprised if there are 21 references in numerous articles that say because 22 there are no medical benefits of talcum powder 23 use, it's not recommended? 24 MS. CURRY:</p>
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<p>1 A Well, I evaluated the risks, and there 2 are none. 3 Q So you just evaluated the risk and 4 it -- it wouldn't matter to you whether there 5 were benefits or not. 6 A Well, my benefit -- 7 MS. CURRY: 8 Object to the form. 9 A I'm sorry. Go ahead. I'm sorry. 10 Yeah. My benefit would be based upon 11 my own experience. It's not necessarily 12 published in medical literature. 13 MS. THOMPSON: 14 Q Okay. Well, that would certainly be 15 anecdotal, wouldn't it? 16 MS. CURRY: 17 Object to the form. 18 A Well, you know, I've got a lot of 19 experience. 20 MS. THOMPSON: 21 Q It's still anecdotal, isn't it, 22 Dr. Birrer? 23 MS. CURRY: 24 Object to the form.</p>	<p>1 Object to the form. 2 A I'd be happy to -- I'd be happy to 3 review them. 4 MS. THOMPSON: 5 Q Have you seen in the medical literature 6 that cornstarch products are recommended if women 7 choose to use a dusting powder over talcum 8 powder? 9 A Can you repeat that? I -- the cough. 10 Q Have you seen in the medical literature 11 that -- where cornstarch products are recommended 12 if women choose to use a dusting powder over 13 talcum powder? 14 A You know, I haven't seen the -- I 15 haven't seen the medical literature recommending 16 cornstarch over talcum. But I have seen -- I've 17 seen discussions about women who use cornstarch. 18 Q And again, there have never been any 19 risks that you're aware of into -- related to the 20 genital use of cornstarch products and the link 21 with ovarian cancer; right? 22 A I don't know of any. 23 Q You mentioned earlier this morning the 24 National Academy of Science, Engineering and</p>

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<p>1 Medicine as a -- as a -- possibly the most 2 reputable source of credible information. 3 Would -- did I describe that sort of 4 correctly? 5 MS. CURRY: 6 Object to the form. 7 A I don't recall saying it's the most, 8 but I used it in context of comparing IARC, if I 9 recall correctly, versus some other sort of pure 10 scientific professional organization, which I 11 would include the National Academy to be that. 12 MS. THOMPSON: 13 Q Okay. Fair enough. 14 And I'm sure you're familiar with the 15 treatise -- it's actually -- came out in book 16 form -- of the study by the Institute of 17 Medicine, I believe, at that time, on ovarian 18 cancer? 19 A Yes. 20 Q Did you participate at all in that 21 study? 22 A They asked me to review it. 23 Q You were one of the reviewers? 24 A They asked me to review it.</p>	<p>1 Q I'll give it to you in a minute. 2 A Okay. 3 Q I just want to ask you a few questions 4 first. 5 Why did you decline to review? 6 A I was too busy. 7 Q Okay. Because it was a big book? 8 A It's monstrous. 9 Q However, several of the authors have 10 been coauthors with you on -- on papers. Is one 11 of them Dr. Karlan? 12 A I believe I've been on papers with 13 Beth. And I think Anil Sood was on there, too. 14 THE COURT REPORTER: 15 Excuse me? 16 THE WITNESS: 17 Anil Sood, S-O-O-D. 18 MS. THOMPSON: 19 Q And Ronald Alvarez -- Alvarez published 20 with you, I think? 21 A I believe so. 22 Q Dr. Karlan's published with you. 23 A (Nods affirmatively.) 24 Q Dr. Levine has published with you?</p>
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<p>1 Q Oh. 2 A I declined. 3 Q They asked you to review it and you did 4 not review it. That explains it, because I 5 didn't see your name on the list. 6 And that was published in 2016? 7 A Uh-huh. 8 Q And what was your understanding of the 9 purpose of that study? 10 MS. CURRY: 11 Object to the form. 12 A It -- I -- you know, I think it was -- 13 this is -- it's just medicine undertakes this 14 periodically for large topics, and that was one 15 of them, to sort of summarize the state of the 16 science. 17 MS. THOMPSON: 18 Q And the -- in fact, the committee that 19 did the study was a committee on the state of the 20 science in ovarian cancer research; is that 21 correct? So you called -- 22 A This is the one by Beth Karlan? 23 Q Yeah. 24 A Yeah.</p>	<p>1 A Doug and I are on a couple of papers, 2 yeah. 3 Q Doug Levine? 4 A Yeah. 5 Q Dr. Odunsi, Kunle Odunsi -- 6 A Kunle. Kunle. 7 Q -- has published with you. And 8 Dr. Sood you mentioned; right? 9 And Dr. -- is it Tworoger or -- 10 A Two- -- Twerger? 11 Q -- Two- -- Twoauger? 12 A T-W-O-G-G-E-R [sic]. 13 Q Has published with you? 14 A I think so, yes. I'd have to check 15 that. 16 Q So you were, I would say, well 17 represented on the -- 18 MS. CURRY: 19 Object to the form. 20 A Well, I know them. 21 MS. THOMPSON: 22 Q -- on the author list? 23 MS. CURRY: 24 Object to the form.</p>

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<p style="text-align: right;">Page 246</p> <p>1 MS. THOMPSON: 2 Q And -- and I assume you would agree 3 with me that the committee to report on the state 4 of the science of ovarian cancer research was 5 selected because of their expertise in the area; 6 correct? 7 A Yes. 8 MS. CURRY: 9 Object to the form. 10 MS. THOMPSON: 11 Q And, as we mentioned, this study was 12 under the auspices of the National Academy of 13 Science, Medicine and Engineering, Institute of 14 Medicine, I believe, originally; correct? 15 A Correct. 16 Q And is it your understanding that this 17 study was also supported by the CDC? 18 A That, I don't know. 19 Q All right. Let me just go ahead and 20 give it to you. 21 A Yeah. 22 (DEPOSITION EXHIBIT NUMBER 18 WAS 23 MARKED FOR IDENTIFICATION.) 24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 248</p> <p>1 A Correct. 2 Q The State of the Science authors state, 3 under "Inflammation," "Studies of the 4 inflammatory marker C-reactive protein suggest a 5 possible association between inflammation and 6 increased risk of ovarian cancer," citing OC and 7 Poole. 8 "Other specific inflammatory factors 9 have also been associated with ovarian cancer." 10 Do you agree that the authors of this 11 treatise reported that there's a possible 12 association between inflammation and increased 13 risk for ovarian cancer? 14 A Well, on these -- on these two 15 sentences, I think they accurately stated, 16 "suggests association." And then they refer -- I 17 don't -- these two papers, I can't directly quote 18 you. I mean -- 19 Q And I -- and I'm not -- 20 A Yeah. 21 Q -- suggesting that they do anything 22 other than suggest the possible association. 23 A Right. 24 Q I'm not trying to read more into it.</p>
<p style="text-align: right;">Page 247</p> <p>1 Q Exhibit 18 I'm marking as Ovarian 2 Cancers, Evolving Paradigms in Research and Care. 3 And this is not the entire book, but it is the 4 entire chapter that we're going to look at, which 5 is "Prevention and Early Detection," Chapter 3. 6 And if you look on page little ix, page 7 9, preface -- 8 A 9? 9? 9 Q Little nine. 10 A Yeah. 11 Q Yeah. The -- the first sentence, "This 12 congressionally mandated report sponsored by the 13 Centers For Disease Control and Prevention 14 assesses the state of research on ovarian cancers 15 from multiple perspectives and by multiple 16 disciplines." 17 So do you agree that the Center For 18 Disease Control sponsored the study? 19 A Correct. 20 Q If you'll turn to page -- I don't have 21 pages on my copy. Page 110. Under the section 22 heading "Inflammation." And this is in a larger 23 section titled "Behavioral and Inflammatory Risk 24 Factors"; correct?</p>	<p style="text-align: right;">Page 249</p> <p>1 A Okay. 2 Q And then they describe "A meta-analysis 3 reported that exposure to asbestos was associated 4 with a 77 percent increased risk of ovarian 5 cancer mortality," citing Carmargo. 6 Are you familiar with that paper? 7 A I am familiar with that. That's the 8 occasional exposure, if I recall correctly. 9 Q And "The International Agency For 10 Research on Cancer determined that there was 11 sufficient evidence to support a causal 12 relationship between asbestos exposure and 13 ovarian cancer." 14 So the authors of this treatise include 15 exposure to asbestos and its association with 16 ovarian cancer in the Inflammation section of -- 17 of risk factors; right? 18 A Say that again? Sorry. For asbestos? 19 Q The authors of this treatise include 20 exposure to asbestos and its association with 21 ovarian cancer in the Inflammation section of 22 risk factors; right? 23 A Correct. 24 Q They go on to say, "This has led to</p>

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<p>1 studies of talc use which is chemically similar</p> <p>2 to asbestos and can cause an inflammatory</p> <p>3 response."</p> <p>4 Do you agree with that statement?</p> <p>5 A I -- I actually hesitate a little on</p> <p>6 that because I'm not so sure that that's a</p> <p>7 temporal relationship, that it was the asbestos</p> <p>8 association that then led to the investigation of</p> <p>9 talc. I don't know, when Dan Cramer published</p> <p>10 his first paper, that's what was driving him.</p> <p>11 Q Do you have any other disagreement with</p> <p>12 the -- the statement other than whether it led to</p> <p>13 the studies of talc use?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I don't know. Again, we've covered</p> <p>17 this. I'm not a mineralogist, so I don't know</p> <p>18 the similarity issues. And inflammatory response</p> <p>19 is not defined. So other than that, it's fine.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Well, the authors -- let's take out the</p> <p>22 asbestos and say "Talc can cause inflammatory</p> <p>23 response." Do you agree or disagree with that?</p> <p>24 A Well, inflammation is a broad issue and</p>	<p>1 one else anywhere in the literature to question</p> <p>2 even this, I don't agree with.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Okay. So you -- so you disagree with</p> <p>5 the authors including that statement in -- in</p> <p>6 this treatise?</p> <p>7 A I just think it's not defined. They</p> <p>8 defined it, then I would have felt a lot better.</p> <p>9 Can cause granulomas inflammatory response. That</p> <p>10 would have been more accurate.</p> <p>11 Q I can understand that you think it</p> <p>12 should have been defined better.</p> <p>13 A Yeah.</p> <p>14 Q But do you agree with the statement</p> <p>15 that's in this treatise, or disagree?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A No opinion.</p> <p>19 MS. THOMPSON:</p> <p>20 Q But you'll agree that at least these</p> <p>21 experts thought it was worthwhile putting the</p> <p>22 statement in this State of the Science treatise</p> <p>23 on ovarian cancer published in 2016; right?</p> <p>24 MS. CURRY:</p>
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<p>1 it's very relevant to this debate, which is are</p> <p>2 we talking granulomas, acute, chronic but</p> <p>3 nongranuloma? I think that's a big issue.</p> <p>4 Q Well, these were the authors that were</p> <p>5 selected because of their expertise to do a State</p> <p>6 of the Science treatise at the behest of the</p> <p>7 National Academy of Science and CDC.</p> <p>8 I'm just asking you do you agree with</p> <p>9 the statement "Talc can cause an inflammatory</p> <p>10 response"?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A And -- and I'm -- I'm answering it.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And you say you don't know? You can't</p> <p>16 agree or disagree? Is that what you're saying?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A The inflammation is not defined. I</p> <p>20 don't know if the similarity between asbestos and</p> <p>21 talc. So other than that, I think it's fine.</p> <p>22 But the -- the -- the implication that all of the</p> <p>23 ovarian cancer experts are on this -- on this --</p> <p>24 on this report and there are no one -- there's no</p>	<p>1 Object to the form.</p> <p>2 A Yeah. Apparently.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Do you know Jason Wright?</p> <p>5 A Division head at Columbia?</p> <p>6 Q Yes.</p> <p>7 A I do know Jason. Not -- I know him by</p> <p>8 reputation. I don't think I've ever actually met</p> <p>9 him.</p> <p>10 Q And what is his reputation?</p> <p>11 A I think he's got a good reputation</p> <p>12 running his division, and he's a good surgeon.</p> <p>13 Q Have you ever published with Jason</p> <p>14 Wright?</p> <p>15 A I don't believe so.</p> <p>16 Q You're right. That was a trick</p> <p>17 question.</p> <p>18 I'm gonna mark --</p> <p>19 MS. CURRY:</p> <p>20 I should have objected.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 19</p> <p>22 WAS MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 I'm gonna mark just a short article of</p>

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<p>1 Jason Wright's as Exhibit Number 19.</p> <p>2 Sorry. I thought I gave you mine.</p> <p>3 THE WITNESS:</p> <p>4 We're done with IM?</p> <p>5 MS. THOMPSON:</p> <p>6 Q Yeah, I think so. And this was an</p> <p>7 article published in -- not an article. It's</p> <p>8 a -- under a practice issue, which I think is an</p> <p>9 ongoing column, basically, in The Green Journal.</p> <p>10 What's The Green Journal?</p> <p>11 A OB-GYN, I think?</p> <p>12 Q And is that the journal that -- the</p> <p>13 journal that's published under the ACOG auspices?</p> <p>14 A I believe so.</p> <p>15 Q Are you a member of ACOG?</p> <p>16 A No.</p> <p>17 Q And this was published in December of</p> <p>18 2018, about six months ago. And was titled "Best</p> <p>19 Articles From the Past Year." And the second</p> <p>20 article listed out of four -- and these were</p> <p>21 what's new in ovarian cancer -- is the</p> <p>22 Penninkilampi article published in Epidemiology.</p> <p>23 A Uh-huh.</p> <p>24 Q And Dr. Wright concludes that, bottom</p>	<p>1 THE WITNESS:</p> <p>2 Oh, leaving you in the dust? Sorry.</p> <p>3 And then the use -- UKC talc studies,</p> <p>4 it really pales in comparison because -- and I</p> <p>5 looked at Penninkilampi pretty carefully. It</p> <p>6 kind of revisited all of the previous data. I</p> <p>7 think -- I -- I would assume that Jason doesn't</p> <p>8 necessarily keep up with this literature, so when</p> <p>9 it came out, he looked at it and said, ah, it's a</p> <p>10 meta-analysis. But it doesn't bring much to the</p> <p>11 table, I think.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Well, you're obviously speculating as</p> <p>14 to Dr. Wright's reasoning, because neither --</p> <p>15 neither one of us knows. But at least Dr. Wright</p> <p>16 chose to include this as one of the four best</p> <p>17 articles regarding ovarian cancer in the past</p> <p>18 year published in 2018; right?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Well, I think he -- I think he -- I</p> <p>22 think he exposed his reasoning a little bit by</p> <p>23 the last sentence in the first paragraph. "The</p> <p>24 possible association with talcum and brain cancer</p>
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<p>1 line, "Perineal application of talc is associated</p> <p>2 with a small increased risk of ovarian cancer."</p> <p>3 Do you disagree with that conclusion by</p> <p>4 Dr. Wright?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A That's his -- I'm trying to figure out</p> <p>8 where you're reading. It's the bottom-line</p> <p>9 statement?</p> <p>10 MS. THOMPSON:</p> <p>11 Q Bottom line, yes.</p> <p>12 A Yeah, I would disagree with that.</p> <p>13 Q Do you disagree with it -- the</p> <p>14 inclusion of the Penninkilampi meta-analysis as</p> <p>15 one of the best articles from the past year?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A You know, it's interesting. I would,</p> <p>19 actually. I -- when -- when you compare it to</p> <p>20 Aerial Three and the Carbon Inhibitors and the</p> <p>21 hypothermic intraperineal chemotherapy, which was</p> <p>22 a New England Journal paper --</p> <p>23 MS. THOMPSON:</p> <p>24 Can you slow down?</p>	<p>1 has attracted media attention, resulting in a</p> <p>2 number of lawsuits."</p> <p>3 So I think that's part of the reason he</p> <p>4 feels this is relevant. Doesn't bring a lot of</p> <p>5 science.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Well, I don't think it was meant to</p> <p>8 bring science. He was choosing this article for</p> <p>9 its -- its relevance for the readership of the</p> <p>10 American College of OB-GYN journal; correct?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I would agree with that.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Do you have an opinion as to whether</p> <p>16 talc, the mineral talc, is inert?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A You have to define "inert."</p> <p>20 MS. THOMPSON:</p> <p>21 Q Do you have an opinion as to whether</p> <p>22 the mineral talc, if it occurs in pure form --</p> <p>23 I'll add that as well -- is chemically inert?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Chemically inert, meaning -- again, I'm</p> <p>3 struggling with this, that it -- it -- it can</p> <p>4 enter into chemical reaction with other</p> <p>5 substances.</p> <p>6 MS. THOMPSON:</p> <p>7 Q I'd just seen that phrase used, so I</p> <p>8 wanted to see if you had an understanding of what</p> <p>9 it meant and -- and whether it's -- that</p> <p>10 statement would be true.</p> <p>11 A I really would need -- if -- if you've</p> <p>12 seen it said, do you have it so I can look at it?</p> <p>13 Q I've seen it by your -- your fellow</p> <p>14 experts.</p> <p>15 A And -- and what was the context? There</p> <p>16 must have been a context.</p> <p>17 Q And the context was talc is chemically</p> <p>18 inert. Would you have an opinion on that?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I think I would say no opinion right</p> <p>22 now.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay. Is it biologically inert?</p>	<p>1 MS. CURRY:</p> <p>2 Sorry.</p> <p>3 A That, I don't think I could say with</p> <p>4 confidence.</p> <p>5 MS. THOMPSON:</p> <p>6 Q So even though talc used for</p> <p>7 pleurodesis is biologically -- is not</p> <p>8 biologically inert, you wouldn't be able to say</p> <p>9 whether baby powder was or not?</p> <p>10 A Well, we --</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Well, we didn't put baby powder into</p> <p>14 the pleural cavities of patients, so we really</p> <p>15 haven't done that.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Would you have any reason to suspect</p> <p>18 that baby powder would behave in a less</p> <p>19 biologically active manner than the talc used in</p> <p>20 pleurodesis?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Well, the talc -- you know, the talc</p> <p>24 used in pleurodesis is -- and I'm putting</p>
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<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Pure mineral talc. If pure talc</p> <p>5 existed.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Huh?</p> <p>9 Okay.</p> <p>10 That's another difficult one. I mean,</p> <p>11 I think that we know talc is used for</p> <p>12 pleurodesis. So that's -- is that a biologic</p> <p>13 process? I think it probably would qualify. So</p> <p>14 I wouldn't call it inert from that standpoint.</p> <p>15 MS. THOMPSON:</p> <p>16 Q And you're not gonna get me to argue</p> <p>17 with that.</p> <p>18 A I don't think so.</p> <p>19 Q Would that opinion apply to Johnson's</p> <p>20 baby powder?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Or do you know?</p>	<p>1 quotations around this -- relatively pure, and</p> <p>2 it's gonna be different than the baby powder.</p> <p>3 But if you're asking me is talc in baby powder, I</p> <p>4 think we can agree on that. And, so, by analogy,</p> <p>5 I would expect some biologic activity.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Okay.</p> <p>8 A Okay.</p> <p>9 Q And same for Shower to Shower?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Actually don't even know -- I've never</p> <p>13 seen a Shower to Shower container, but it's the</p> <p>14 product; right?</p> <p>15 MS. THOMPSON:</p> <p>16 Q Do you know what's in Shower to Shower?</p> <p>17 A I'm assuming it's analogous to baby</p> <p>18 powder.</p> <p>19 Q If -- well, would -- would that opinion</p> <p>20 apply to fibrous talc?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A You know, again, I'm not a mineralogy</p> <p>24 expert, so I'm not going to make a comment on</p>

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<p style="text-align: right;">Page 262</p> <p>1 that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Do you know what fibrous talc is?</p> <p>4 A I'm not sure I can really define it.</p> <p>5 Q And it's your understanding that</p> <p>6 fibrous talc or talc with asbestiform fibers is</p> <p>7 specifically excluded from the IARC 2010</p> <p>8 monograph? Correct?</p> <p>9 A Say that again, please.</p> <p>10 Q Is it your -- let me rephrase it just a</p> <p>11 little bit. Is it your understanding that</p> <p>12 fibrous talc or talc with asbestiform fibers is</p> <p>13 specifically excluded from the IARC 2010</p> <p>14 monograph?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So that's -- asbestiform fibers or</p> <p>18 asbestos?</p> <p>19 MS. THOMPSON:</p> <p>20 Q Asbestiform fibers. Is there a</p> <p>21 difference between fibrous talc and talc with</p> <p>22 asbestiform fibers?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p style="text-align: right;">Page 264</p> <p>1 A It sounds like it, yes. Habit. It's a</p> <p>2 different definition of habit than I'm used to.</p> <p>3 MS. THOMPSON:</p> <p>4 Q And I think you probably recall when we</p> <p>5 were discussing Health Canada, they were also</p> <p>6 referring to talc, nonasbestiform talc; right?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A I believe so.</p> <p>10 MS. THOMPSON:</p> <p>11 Q And in the -- let's go ahead and mark</p> <p>12 the 2012 IARC that relates to asbestos.</p> <p>13 (DEPOSITION EXHIBIT NUMBER 20</p> <p>14 WAS MARKED FOR IDENTIFICATION.)</p> <p>15 MS. THOMPSON:</p> <p>16 Q That'd be Exhibit 20. And on the first</p> <p>17 page, 219, "The conclusions" -- reading in the</p> <p>18 first paragraph -- "The conclusions reached in</p> <p>19 this monograph about asbestos and its</p> <p>20 carcinogenic risk apply to these six type of</p> <p>21 fibers wherever they are found, and that includes</p> <p>22 talc-containing asbestiform fibers."</p> <p>23 A Yes.</p> <p>24 Q Is that your understanding of this?</p>
<p style="text-align: right;">Page 263</p> <p>1 A Again, I -- I -- that's not in my area</p> <p>2 of expertise.</p> <p>3 MS. THOMPSON:</p> <p>4 Q So you don't know --</p> <p>5 A No.</p> <p>6 Q -- whether there's any difference or</p> <p>7 not?</p> <p>8 A I have no opinion.</p> <p>9 Q And -- well, we can look at the 2010 --</p> <p>10 A Uh-huh.</p> <p>11 Q -- monograph to -- to clarify that.</p> <p>12 So on page 277 --</p> <p>13 A Uh-huh.</p> <p>14 Q -- "Talc may also form" -- reading in</p> <p>15 paragraph 3 --</p> <p>16 A Uh-huh.</p> <p>17 Q -- "Talc may also form as true mineral</p> <p>18 fibers that are asbestiform. Asbestiform</p> <p>19 describes the pattern of growth of a mineral that</p> <p>20 is referred to as a habit."</p> <p>21 And you would agree that that is not</p> <p>22 the same as talc with asbestos; right?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p style="text-align: right;">Page 265</p> <p>1 A I see that. Yeah.</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Would your opinions regarding the</p> <p>6 biological activity of baby powder apply as well</p> <p>7 to baby powder that contains asbestos?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Not asbestiform but asbestos?</p> <p>11 MS. THOMPSON:</p> <p>12 Q Asbestiform, it -- talc with asbestos</p> <p>13 is talc with asbestos.</p> <p>14 A Okay.</p> <p>15 Q Talc with --</p> <p>16 A So it wouldn't change -- it wouldn't</p> <p>17 change my view.</p> <p>18 Q Okay. And what about baby powder that</p> <p>19 contains heavy metals like chromium, nickle, and</p> <p>20 cobalt?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A No.</p> <p>24 MS. THOMPSON:</p>

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<p>1 Q And what about baby powder with 2 chemicals that are either possible or known 3 carcinogens, like styrene, coumarin, eugenol, 4 D'Limonine, p-Cresol, muscutone or benzophenone. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Would it change your opinion regarding 9 the biologic activity of baby powder? 10 A Well, looking at the biologic activity 11 of baby powder, based upon what I reviewed, the 12 answer is no because it doesn't matter what's in 13 that. We looked at the biologic activity. 14 Q So it doesn't matter to you whether 15 there are known carcinogens in baby powder? 16 MS. CURRY: 17 Object to the form. 18 A Well, based upon the studies, then we 19 would have seen convincing evidence of biologic 20 causality. We didn't. 21 MS. THOMPSON: 22 Q And you're referring to the 23 epidemiology studies? 24 MS. CURRY:</p>	<p>1 A Okay. Okay. Thank you. 2 (DEPOSITION EXHIBIT NUMBER 21 WAS 3 MARKED FOR IDENTIFICATION.) 4 MS. THOMPSON: 5 Q This is Exhibit 21, "Asbestos Exposure 6 and Ovarian Fiber Burden." 7 Have you seen this paper, Dr. Birrer? 8 A So I don't think -- let me -- I don't 9 think I reviewed this. Let me just check. 10 Well, it was on my list. I must have. 11 Q And again, just going to the 12 conclusions of these authors, the last paragraph 13 in the abstract. 14 A Uh-huh. 15 Q "This study demonstrates that asbestos 16 can reach the ovary. Although the number of 17 subjects is small, asbestos appears to be present 18 in ovarian tissue more frequently and in higher 19 amounts in women with a documentable exposure 20 history." 21 Do you agree that was the conclusion of 22 the authors? 23 A That's what they state. 24 Q And on page 438, last paragraph, "The</p>
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<p>1 Object to the form. 2 A I'm referring to all of it. 3 MS. THOMPSON: 4 Q Would the presence of known carcinogens 5 provide a plausible mechanism? 6 MS. CURRY: 7 Object to the form. 8 A Mechanisms for -- for what? 9 MS. THOMPSON: 10 Q For possible carcinogenesis. 11 MS. CURRY: 12 Object to the form. 13 A But we didn't see carcinogenesis. 14 There's no plausible biologic association or -- 15 so I'm not sure what we're designing a mechanism 16 for. 17 MS. THOMPSON: 18 Q And are you familiar with the Heller 19 paper regarding the finding of asbestos in human 20 ovaries? 21 A The Heller paper -- 22 Q 1996? 23 A The one we just reviewed or -- 24 Q I'm handing you a new one.</p>	<p>1 fact that exposure to a husband is more 2 significant than exposure to a father suggests a 3 possible role for sexual contact as the 4 transporting vector for asbestos fibers." 5 Would you agree that if sexual -- if 6 sexual contact was a transporting vector, that 7 the fibers would enter the peritoneal cavity and 8 ovaries through the vagina? 9 MS. CURRY: 10 Object to the form. 11 A Just ask that once more, please. 12 MS. THOMPSON: 13 Q That wasn't a very good question. The 14 problem is I don't know exactly how to make it 15 better. 16 If -- if the authors are proposing 17 sexual contact as a possible means for 18 transporting the asbestos fibers into -- into the 19 ovaries, would -- wouldn't you assume that that 20 would be via a vaginal route? 21 A Yeah, I wouldn't assume that. I think 22 one of the challenges here is that there are more 23 differences between a wife and a daughter than 24 just sexual activity. Wives may be in close</p>

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<p>1 contact with their husband in terms of --</p> <p>2 Q But that's not the question I'm asking.</p> <p>3 I'm saying if sexual contact is a</p> <p>4 transporting vector, wouldn't you assume that</p> <p>5 that would be through a vaginal route, not</p> <p>6 inhalation or some other way?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A If -- if sexual activity was the</p> <p>10 mechanism of transport, is that what you're</p> <p>11 saying?</p> <p>12 MS. THOMPSON:</p> <p>13 Q Right.</p> <p>14 A Yeah.</p> <p>15 It's kind of a non sequitur. I mean,</p> <p>16 you're making the assumption sexual contact, and</p> <p>17 then you're asking, well, if that's it -- if</p> <p>18 that's the mode of transmission, is that the mode</p> <p>19 of transmission. Well, then, you've already</p> <p>20 assumed it, so -- so I could --</p> <p>21 Q Okay. I just wanted to make sure</p> <p>22 you're assuming it because the authors don't</p> <p>23 specifically say, you know, the -- the asbestos</p> <p>24 comes from a perineal exposure --</p>	<p>1 Correct?</p> <p>2 A So it's household contact with men who</p> <p>3 had fairly high exposure. So I think you can</p> <p>4 probably assume it was a substantial amount of</p> <p>5 exposure.</p> <p>6 Q What's your basis for assuming that</p> <p>7 it's a substantial amount of exposure?</p> <p>8 A Well, these men, if they're working in</p> <p>9 the asbestos area, are going to be covered with</p> <p>10 it. That's been shown, which is unfortunate,</p> <p>11 but, yeah.</p> <p>12 Q Can you point me to any study that</p> <p>13 compares how much exposure there would be in a</p> <p>14 talc mine versus a woman using talcum powder on</p> <p>15 her perineum daily or twice daily for -- for</p> <p>16 decades?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Well, this is not talc. This is not</p> <p>20 talc; this is asbestos.</p> <p>21 MS. THOMPSON:</p> <p>22 Q I know. That's a separate question.</p> <p>23 It's not in the article.</p> <p>24 A Okay. Can you ask that again?</p>
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<p>1 A Well, they're making -- yeah. They're</p> <p>2 making that distinction between a daughter and --</p> <p>3 Q Yeah, they are. I just wanted to make</p> <p>4 sure we are understanding that.</p> <p>5 And in the conclusions, "In our study,</p> <p>6 the women with a positive exposure history had</p> <p>7 asbestos detected in their ovaries more</p> <p>8 frequently and in higher counts."</p> <p>9 If that did indeed happen, that would</p> <p>10 argue against any kind of laboratory</p> <p>11 contamination, wouldn't it?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I'm just checking the numbers. I'm</p> <p>15 sorry.</p> <p>16 9 of 13 household, 6 of 17 and about</p> <p>17 one out of -- one out of 17.</p> <p>18 So, you know, I think -- I think it's</p> <p>19 fair to say that laboratory contamination should</p> <p>20 be more equal in all groups. It doesn't</p> <p>21 completely eliminate it, but...</p> <p>22 MS. THOMPSON:</p> <p>23 Q And these were exposed through</p> <p>24 household contact, not occupational exposure.</p>	<p>1 Q Can you point me to any study that</p> <p>2 compares how much exposure there would be in a</p> <p>3 talc mine versus a woman using talcum powder on</p> <p>4 her perineum daily or twice daily for decades?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Yeah. I don't think that's been asked</p> <p>8 and qualified. So it's difficult.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Is the fact that asbestos causes</p> <p>11 pleural and peritoneal mesothelioma relevant to</p> <p>12 whether or not talcum powder can cause ovarian</p> <p>13 cancer?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A Not to the data that I -- and the</p> <p>17 studies that I reviewed.</p> <p>18 MS. THOMPSON:</p> <p>19 Q And I don't think this was clear to me</p> <p>20 this morning.</p> <p>21 How does asbestos get to the</p> <p>22 peritoneum, in your opinion?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p style="text-align: right;">Page 274</p> <p>1 MS. THOMPSON: 2 Q Or do you not know? 3 A Well, I -- I summarized my 4 understanding as not being necessarily an 5 asbestos expert, but my clinical experience, 6 which is asbestos, obviously, is a risk factor 7 for mesothelioma and for lung cancer. If it's 8 inhaled, then it's -- it's transiting to the 9 pleural cavity, which is where, then, it's 10 inducing mesothelioma. 11 And then there are peritoneal 12 mesotheliomas. And I don't honestly think we 13 know precisely how it gets there. There is -- 14 there is some evidence that pleural activities 15 can communicate with peritoneal activities. And 16 the example I'd give you on that is if one has 17 malignant ascites, fluid in the peritoneal 18 cavity, it frequently ends up in the pleural 19 cavities. 20 So -- so -- but you've got diaphragm 21 there with parietal pleura covering it. So 22 exactly how that happens, I don't know. 23 Q Is migration or transport through the 24 genital tract of asbestos a plausible mechanism</p>	<p style="text-align: right;">Page 276</p> <p>1 women who are massively exposed? 2 A I think that's the epidemiologic data 3 I'm aware of. 4 Q You're not aware of the epidemiology 5 that includes household or domestic exposure? 6 MS. CURRY: 7 Object to the form. 8 A Secondary exposures? 9 MS. THOMPSON: 10 Q Correct. 11 A Yeah. Yeah. I know that. I know that 12 a little bit less than the initial occupational 13 exposure. Most -- most of that came from the 14 Army. 15 Q And you'll agree that you don't have 16 any literature that compares what that exposure 17 would be compared to an exposure with someone 18 using talcum powder on their genitals for -- 19 A I agree. 20 Q -- for an extended period of time? 21 A Yes. 22 Q So I want to understand. You don't 23 know whether asbestos fibers can migrate or be 24 transported up the genital tract, but you're</p>
<p style="text-align: right;">Page 275</p> <p>1 for asbestos getting into the peritoneal cavity? 2 MS. CURRY: 3 Object to the form. 4 A Yeah, I don't -- I don't know the 5 answer to that. The increased incidence of 6 ovarian cancer in asbestos-exposed women, I mean, 7 I think it's -- it's agreed upon that those women 8 had massive exposures. So -- 9 MS. THOMPSON: 10 Q What -- what's your basis for saying 11 those women had massive exposures? 12 A Well, my impression is that in gas mask 13 manufacturing -- 14 And, of course, this is in the second 15 world war. 16 -- there wasn't really an appreciation 17 how bad asbestos is. And, so, they got exposed 18 to certainly levels that, you know, average 19 people would not. And even -- even in towns that 20 had cement factories and issues like that, those 21 studies were really not all that positive. But 22 the gas masks are. 23 Q Is it your opinion that the studies 24 that link asbestos with ovarian cancer are all in</p>	<p style="text-align: right;">Page 277</p> <p>1 confident that talc cannot. Is that right? 2 MS. CURRY: 3 Object to the form. 4 A Well, that's part of the reason I don't 5 think asbestos -- we can't say that. If I 6 remember, the question was can -- can the genital 7 tract be an explanation for the asbestos fibers. 8 In my opinion, no, we don't know that. And the 9 data we have from talc suggests, no, that doesn't 10 happen. 11 MS. THOMPSON: 12 Q Still not clear. 13 So asbestos, you don't know; but talc, 14 you know it doesn't. Is that right? 15 MS. CURRY: 16 Object to the form. 17 A Well, I would say, you know, if you -- 18 if you want to pursue that, then I would say, 19 based upon the talc data, which has actually been 20 examined, that it's unlikely that asbestos is 21 going up through the genital tract. 22 MS. THOMPSON: 23 Q So, in your opinion, that is not a 24 plausible mechanism for asbestos reaching the</p>

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<p>1 ovaries?</p> <p>2 A Correct.</p> <p>3 Q And what is your explanation for</p> <p>4 household members of asbestos working -- workers</p> <p>5 having an increased risk of ovarian cancer and</p> <p>6 mesothelioma?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Well, again, not being an asbestos</p> <p>10 expert, but I would assume this is inhalation,</p> <p>11 much like other exposures to asbestos, and then</p> <p>12 absorption through the lung parenchyma and</p> <p>13 ultimately through this pleural perineal process.</p> <p>14 MS. THOMPSON:</p> <p>15 Q But it's your opinion that the transfer</p> <p>16 or migration of the fibers through coitus is not</p> <p>17 plausible?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I don't know the data for that.</p> <p>21 MS. THOMPSON:</p> <p>22 Q Well, you don't know data for the other</p> <p>23 routes either, do you?</p> <p>24 MS. CURRY:</p>	<p>1 lot more data for -- if it's something to do with</p> <p>2 genital transport than you do for other -- other</p> <p>3 methods, but --</p> <p>4 A Well, I am a scientist.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Well, it's selective science.</p> <p>9 MS. CURRY:</p> <p>10 Object to the form and argumentative.</p> <p>11 MS. THOMPSON:</p> <p>12 Q If you are advising a patient, could</p> <p>13 you reassure her that talcum powder containing</p> <p>14 asbestos is safe to use on the perineum?</p> <p>15 A It's -- it's an irrelevant issue.</p> <p>16 Q Okay. Patient says, Dr. Birrer, is it</p> <p>17 safe for me to continue using baby powder on the</p> <p>18 per- -- on my perineum. And your answer would</p> <p>19 be?</p> <p>20 A Yes.</p> <p>21 Q And if -- assuming that baby powder</p> <p>22 is -- is shown to contain asbestos, would your</p> <p>23 advice be the same?</p> <p>24 MS. CURRY:</p>
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<p>1 Object to the form.</p> <p>2 A Well, there's a lot of literature for,</p> <p>3 you know, shipyard builders where they got</p> <p>4 exposed to asbestos. They get both pleural and</p> <p>5 perineal mesothelioma.</p> <p>6 MS. THOMPSON:</p> <p>7 Q We're talking about household exposure.</p> <p>8 A But again, that's data to tell us,</p> <p>9 under the extreme conditions, where and how that</p> <p>10 might migrate.</p> <p>11 Q Well, but you don't believe Heller, who</p> <p>12 proposed that sexual transmission was a plausible</p> <p>13 route for -- for the asbestos fibers in contacts</p> <p>14 to have a higher incidence of ovarian cancer in</p> <p>15 perineal mesothelioma; right?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A Well, they didn't say that. They</p> <p>19 didn't say that. They said it's possible.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay.</p> <p>22 A They're proposing a hypothesis and I</p> <p>23 said, well, show me the data.</p> <p>24 Q Okay. Well, it seems like you need a</p>	<p>1 Object to the form.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Would your answer be the same?</p> <p>4 A So this is a hypothetical?</p> <p>5 Q Yeah.</p> <p>6 A Powder is the -- is -- is then</p> <p>7 determined to have asbestos?</p> <p>8 Q Correct.</p> <p>9 A Again, so is the question am I</p> <p>10 recommending a patient use asbestos?</p> <p>11 Q Yeah. That's the question.</p> <p>12 A Yeah. No, I wouldn't do that.</p> <p>13 Q Did you read Dr. Longo's report?</p> <p>14 A You know, that came up.</p> <p>15 Can you -- do you have a copy of it to</p> <p>16 refresh my memory?</p> <p>17 Q I do.</p> <p>18 (DEPOSITION EXHIBIT NUMBER 22 WAS</p> <p>19 MARKED FOR IDENTIFICATION.)</p> <p>20 MS. THOMPSON:</p> <p>21 Q I'm gonna mark -- Exhibit 22 is</p> <p>22 Dr. Longo's report in the MDL.</p> <p>23 Exhibit 23 is Dr. Longo's supplemental</p> <p>24 report in the MDL.</p>

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<p>1 (DEPOSITION EXHIBIT NUMBER 23 WAS 2 MARKED FOR IDENTIFICATION.) 3 MS. THOMPSON: 4 Q Do you remember seeing these reports? 5 MS. CURRY: 6 Do you have an extra copy? 7 MS. THOMPSON: 8 I do. 9 MS. CURRY: 10 Thank you. 11 A It's not on my list. 12 MS. THOMPSON: 13 Q Did you ask to see any testing on 14 Johnson's baby powder to see if it contained 15 asbestos? 16 A No, I did not. I think I came across 17 this, actually, previously, but not in this one. 18 Q And understanding that you're -- well, 19 I assume that you're not an expert in asbestos 20 testing; right? 21 A Correct. 22 Q Assuming that -- and if you want to 23 read the report, we can go off the record. 24 But assuming that Dr. Longo found</p>	<p>1 telling a patient it was safe to use baby powder 2 on her genitals if it contained -- if two-thirds 3 of the bottles contained asbestos? 4 MS. CURRY: 5 Object to the form. 6 A You know, again, I'm gonna emphasize 7 this. My review of the data suggests that -- 8 that those products are not a risk for ovarian 9 cancer. 10 MS. THOMPSON: 11 Q I -- I'm clear -- 12 A Regardless of what the hypothetical is. 13 Q I'm clear on that. 14 A Okay. 15 Q But -- but this is not really even a 16 hypothetical. This is testing that has shown 17 two-thirds of the baby powder samples contain 18 asbestos. 19 Do -- would you still feel good about 20 advising a patient that it's safe? 21 MS. CURRY: 22 Object to the form. 23 A I would -- I would tell them that based 24 on my review of the literature, extensive review</p>
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<p>1 between 60 and 70 percent of bottles, historical 2 samples provided by Johnson & Johnson over 3 decades to contain asbestos, would that impact 4 how you would advise a patient who says, 5 Dr. Birrer, is it safe for me to use Johnson's 6 baby powder on my perineum? 7 MS. CURRY: 8 Object to the form. 9 A So, again, this -- this gets to the 10 point of having reviewed all the literature in 11 terms of the product, Shower to Shower, 12 Johnson & Johnson's baby powder, as increasing 13 the risk for ovarian cancer showing biological 14 plausibility. 15 Careful review of that literature has 16 shown nothing. So whether there's asbestos in 17 there or not, I don't know. 18 MS. THOMPSON: 19 Q Would -- would it give you pause? 20 MS. CURRY: 21 Object to the form. 22 A Pause. I don't know what pause is. 23 MS. THOMPSON: 24 Q Would you have some concern about</p>	<p>1 of the literature, it is a safe product. 2 MS. THOMPSON: 3 Q And what if they said, Dr. Birrer, is 4 that true even if it does contain asbestos? 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Would your answer be the same? 9 A I would -- I would -- you know, I would 10 say, again, it doesn't matter if that's the way 11 the product was used. And it was careful 12 studies. 13 Q Have you seen any studies from 14 Johnson & Johnson regarding their asbestos 15 testing? 16 A I haven't seen that. 17 Q Were you shown any testing results from 18 Johnson & Johnson? 19 A No. 20 Q Were you shown any testing results from 21 defense experts as to whether baby powder 22 contained asbestos? 23 MS. CURRY: 24 Object to the form.</p>

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<p>1 A Not that I recall, although, as I said</p> <p>2 before, in the expert witness reports, the ones</p> <p>3 that involved minerals in asbestos, I went</p> <p>4 through them fairly rapidly.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Do you know if any defense experts even</p> <p>7 performed any testing as to whether there was</p> <p>8 asbestos in baby powder?</p> <p>9 A No.</p> <p>10 Q Do you know -- did you see that</p> <p>11 Dr. Longo also tested for talc fibers, so-called</p> <p>12 fibrous talc?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Fibrous talc. I can't quote you that,</p> <p>16 but I'll rely on you.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Dr. Longo found -- and, you know, feel</p> <p>19 free to look to that summary -- virtually every</p> <p>20 Johnson's baby powder and Shower to Shower sample</p> <p>21 provided from historical samples contained talc</p> <p>22 fibers. The same answer as to asbestos; it</p> <p>23 doesn't matter?</p> <p>24 MS. CURRY:</p>	<p>1 A No, I didn't. I see the litigation ad.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Okay. I'm gonna give you -- I'm gonna</p> <p>4 mark as Exhibit 24 a report -- call it an article</p> <p>5 because it's titled "News" -- from BMJ. And</p> <p>6 what's BMJ?</p> <p>7 A I don't know. I was gonna ask you.</p> <p>8 Q Oh. British Medical Journal. You've</p> <p>9 heard of the British Medical Journal?</p> <p>10 A Yes. I thought it was Birmingham.</p> <p>11 Q I -- that was another trick question.</p> <p>12 I said it was a news report from a medical</p> <p>13 journal.</p> <p>14 And you can take a minute to look</p> <p>15 through that --</p> <p>16 A Please.</p> <p>17 Q -- since you haven't seen the news</p> <p>18 reports.</p> <p>19 So you'll, I think, agree with me that</p> <p>20 the editors didn't come to any conclusions as to</p> <p>21 whether or not baby powder caused ovarian cancer;</p> <p>22 right?</p> <p>23 A Correct.</p> <p>24 Q But they -- the editors of the journal</p>
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<p>1 Object to the form.</p> <p>2 A There again, these products that he's</p> <p>3 analyzing have been used for years. We have the</p> <p>4 epi data. It's unconvincing. We've got the</p> <p>5 biologic data. It's definitely unconvincing.</p> <p>6 The inflammatory theory is inconsistent. So to</p> <p>7 say anything other than that this is a safe</p> <p>8 product, I think, is inappropriate.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Are -- are you aware of news reports</p> <p>11 over the past two or three months of the presence</p> <p>12 of asbestos in baby powder and</p> <p>13 Johnson & Johnson's knowledge of the asbestos in</p> <p>14 baby powder?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I'm not.</p> <p>18 (DEPOSITION EXHIBIT NUMBER 24</p> <p>19 WAS MARKED FOR IDENTIFICATION.)</p> <p>20 MS. THOMPSON:</p> <p>21 Q You haven't seen any news reports about</p> <p>22 asbestos in baby powder?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 at least thought it important to -- to report the</p> <p>2 claims that baby powder may contain asbestos;</p> <p>3 correct?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A I think they thought this would be of</p> <p>7 interest to the readership.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Agreed.</p> <p>10 And you don't think the editors would</p> <p>11 have published this news report if it wasn't</p> <p>12 based on what they considered credible evidence,</p> <p>13 would you?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I would -- I would not agree with that</p> <p>17 statement. I think they would -- they might not</p> <p>18 agree with any of this or the role of talcum</p> <p>19 powder or asbestos, but -- but they felt their</p> <p>20 readership would be interested in this.</p> <p>21 MS. THOMPSON:</p> <p>22 Q So BMJ has become the National Enquirer</p> <p>23 of medical journals now?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Medical journals are not above some</p> <p>3 editorial latitude.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And why would the readers be</p> <p>6 interested?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Well, I think there -- there is major</p> <p>10 litigation involved. There are a number of court</p> <p>11 cases. The FDA has weighed in a little bit. And</p> <p>12 then there are, quote, internal documents. All</p> <p>13 of that is, for lack of a better word, you know,</p> <p>14 scientists are looking for things to excite their</p> <p>15 lives, so this is entertainment.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Might it be that BMJ thought their</p> <p>18 doctors would want to tell patients about this</p> <p>19 information?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 MR. MIZGALA:</p> <p>23 So now you're --</p> <p>24 MS. THOMPSON:</p>	<p>1 conclusions. You're a physician and you see this</p> <p>2 article. Might it be something that you would be</p> <p>3 interested in so you could advise your patients</p> <p>4 accordingly?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Definitely not.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And you would not give a medical</p> <p>10 journal any credit that doctors might want to</p> <p>11 advise their patients that baby powder contains</p> <p>12 asbestos?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A I think they do a reasonable job of</p> <p>16 simply reporting what is happening. And they</p> <p>17 talk about -- they talk about internal documents.</p> <p>18 Those are essentially impossible to assess. They</p> <p>19 talk about the New York Times. Not a scientific</p> <p>20 organization. There is some hearsay from the</p> <p>21 FDA. And then they -- they out line the court</p> <p>22 case. I wouldn't -- I would not take this and</p> <p>23 translate it into some recommendation for a</p> <p>24 patient.</p>
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<p>1 Q Just a hunch. Just a hunch.</p> <p>2 MR. MIZGALA:</p> <p>3 Now you're asking him to speculate.</p> <p>4 You've been doing this the whole deposition.</p> <p>5 MS. GARBER:</p> <p>6 I don't think we're doing speaking</p> <p>7 objections. So the objection is to form.</p> <p>8 MR. MIZGALA:</p> <p>9 Yeah. But she's gone to task for</p> <p>10 speculating earlier, and she's doing the same</p> <p>11 thing.</p> <p>12 MS. GARBER:</p> <p>13 Okay. The objection is to form. You</p> <p>14 know that. Let's follow the rules.</p> <p>15 A Say again.</p> <p>16 MS. THOMPSON:</p> <p>17 Q You're a physician that reads journals.</p> <p>18 A Uh-huh.</p> <p>19 Q As a physician, let's -- we're going to</p> <p>20 take a hypothetical that you're not involved in</p> <p>21 talcum powder litigation. Okay?</p> <p>22 A Uh-huh.</p> <p>23 Q And you haven't done this thorough</p> <p>24 review that you have done to come to your</p>	<p>1 MS. THOMPSON:</p> <p>2 Q So it wouldn't be any different from</p> <p>3 reading a story about the Kardashians in BMJ?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Is that what you're saying?</p> <p>8 A You want an answer to that?</p> <p>9 Q Sure. It was a question.</p> <p>10 A Yeah, it's different.</p> <p>11 Q Okay. Thanks.</p> <p>12 A It's about talc.</p> <p>13 Q Are you aware that concerns have been</p> <p>14 raised about the safety of pleurodesis?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So, actually, my understanding of</p> <p>18 pleurodesis, at least in the relationship of talc</p> <p>19 in ovarian cancer, there's essentially no</p> <p>20 evidence linking the two. But let me -- let me</p> <p>21 see what you're referring to.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Well, I was just -- let me ask</p> <p>24 questions first.</p>

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<p>1 A Uh-huh.</p> <p>2 Q And that was: Are you aware that</p> <p>3 concerns have been raised about the safety of</p> <p>4 pleurodesis?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A No.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And have you been -- are you aware --</p> <p>10 no, you're not aware of any concerns at all.</p> <p>11 Let me go ahead and give you Exhibit</p> <p>12 25.</p> <p>13 (DEPOSITION EXHIBIT NUMBER 25</p> <p>14 WAS MARKED FOR IDENTIFICATION.)</p> <p>15 MS. THOMPSON:</p> <p>16 Q And this is a letter to the editor.</p> <p>17 I --</p> <p>18 A Uh-huh.</p> <p>19 Q -- I understand that. It's not a</p> <p>20 formal study, per se.</p> <p>21 MS. CURRY:</p> <p>22 Do you have an extra copy?</p> <p>23 MS. THOMPSON:</p> <p>24 Yeah, I do.</p>	<p>1 stating that talc is asbestos-free should not</p> <p>2 release us from a responsibility to the patient,</p> <p>3 especially when safe alternatives are available."</p> <p>4 And the picture is of a talc fiber</p> <p>5 found in a pleurodesis talc.</p> <p>6 Does that cause you any concern?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A It doesn't. To be fair, the entire --</p> <p>10 my -- my impression is, although I don't do -- I</p> <p>11 do pleurodesis for cancer patients, in which</p> <p>12 case, unfortunately, longevity makes this whole</p> <p>13 issue moot. But we've moved away from talc for</p> <p>14 other reasons. It's painful. It doesn't work</p> <p>15 all the time. We have better agents. So that</p> <p>16 kind of makes this moot.</p> <p>17 But, you know, again I think you</p> <p>18 pointed out appropriately. It's -- they're</p> <p>19 entitled to their opinions. It's a single</p> <p>20 article -- it's a single letter, and the studies</p> <p>21 addressing this are very limited. So I think --</p> <p>22 I think they're -- making fairly bold statements</p> <p>23 on not a lot of data.</p> <p>24 MS. THOMPSON:</p>
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<p>1 Q Do you know Dr. -- I think it's Ghio.</p> <p>2 I don't know how it's pronounced. Do you know</p> <p>3 Ghio and Dr. Roggli?</p> <p>4 A I don't know either of them.</p> <p>5 Q And I'll let you read through this.</p> <p>6 Let's just read that -- I'm gonna read the last</p> <p>7 paragraph and get your thoughts.</p> <p>8 A Okay.</p> <p>9 Q "The assertion that contemporary</p> <p>10 purified preparations of talc do not contain</p> <p>11 asbestos, therefore eliminating a risk of</p> <p>12 mesothelioma, should be closely examined prior to</p> <p>13 its acceptance for clinical application. The</p> <p>14 methodology used to confirm the lack of</p> <p>15 asbestiform materials in a finished product,</p> <p>16 (i.e., X-ray diffraction, optical microscopy, and</p> <p>17 electron microscopy techniques) and its</p> <p>18 sensitivity must be provided. Even if the</p> <p>19 product is "asbestos-free," the mechanism of</p> <p>20 cancer induction by asbestos (i.e.,</p> <p>21 metal-catalyzed radical generation) is similarly</p> <p>22 pertinent to talc and the occurrence of fibrous</p> <p>23 forms of the sheet silicate itself raises issues</p> <p>24 about clearance and long-term safety. Simply</p>	<p>1 Q But you'll agree that this was out of</p> <p>2 the context of any litigation about baby powder;</p> <p>3 correct?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A I would agree on that.</p> <p>7 MS. THOMPSON:</p> <p>8 Q What's your understanding of the</p> <p>9 mechanism by which asbestos causes cancer?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Again, I'm not necessarily an expert on</p> <p>13 this. The association and the risk factor's very</p> <p>14 clear. I think the present theory -- and I would</p> <p>15 put it as a theory -- is this is a substance that</p> <p>16 essentially doesn't dissolve, stays there, or at</p> <p>17 least is very long-lasting, and then, under those</p> <p>18 circumstances, causes effectively the</p> <p>19 transformation of cells that it is in close</p> <p>20 contact with. And that's -- it includes, of</p> <p>21 course, lung cancer per se, but also mesothelioma</p> <p>22 where these particles will sort of stay in the</p> <p>23 pleural cavity.</p> <p>24 MS. THOMPSON:</p>

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<p style="text-align: right;">Page 298</p> <p>1 Q Is there anything in that description 2 that you gave that would be different for talc? 3 MS. CURRY: 4 Object to the form. 5 A Well -- 6 MS. THOMPSON: 7 Q And we're speaking in general terms. 8 MS. CURRY: 9 Object to the form. 10 A Talc doesn't do this; right? 11 MS. THOMPSON: 12 Q Well, no. Let's go back. 13 You would agree that talc essentially 14 doesn't dissolve also; correct? 15 MS. CURRY: 16 Object to the form. 17 A It's a mineral. 18 MS. THOMPSON: 19 Q And it stays there; correct? 20 MS. CURRY: 21 Object to the form. 22 A Well, I don't know if it stays there as 23 long as asbestos. You know, if you look at the 24 pleurodesis patients, there's really essentially</p>	<p style="text-align: right;">Page 300</p> <p>1 because I wasn't asked to review that, and -- and 2 my experience is in lung cancer. 3 That process, I think, is still -- is 4 still questionable. And -- and because of that, 5 that -- that process may be specifically 6 associated with asbestos. So to extrapolate that 7 to some other molecule that, oh, by the way, it 8 hangs around for a while, is not acceptable. 9 Q So I understand that you apparently 10 were not asked to consider asbestos. You're a 11 scientist; right? 12 A Yes. 13 Q Did you not have any curiosity about 14 what effects the presence of asbestos in baby 15 powder would have? 16 MS. CURRY: 17 Object to the form. 18 A To be honest, that wasn't the way I 19 approached it. I approached it by looking 20 specifically from the talc standpoint. 21 MS. THOMPSON: 22 Q Okay. 23 A And -- and the studies and then looking 24 at that objectively. And, again, we get back to</p>
<p style="text-align: right;">Page 299</p> <p>1 no increase in ovarian cancer. 2 MS. THOMPSON: 3 Q Well, you've already told us that 4 pleurodesis patients have typically a life 5 expectancy of months, not years. 6 MS. CURRY: 7 Object to the form. 8 A I said in the ones I treat. But in 9 chronic heart failure, those patients have been 10 followed up to 40 years. 11 MS. THOMPSON: 12 Q I would like to see that study, but 13 we'll do that another day. How's that? 14 A I don't know if I'd like another day. 15 Q Let's say -- or -- your next comment, 16 or at least it's very long-lasting. You would 17 agree that -- with that for talc; right? 18 A Uh-huh. Uh-huh. 19 Q And, then, for asbestos, you say it 20 causes effectively the transformation of cells 21 that it's in close contact with. But you don't 22 believe that happens for talc; correct? 23 A Well, again, this may reflect my -- 24 somewhat my ignorance about asbestos per se,</p>	<p style="text-align: right;">Page 301</p> <p>1 this issue of really looking at epidemiologic 2 studies, just use powder, and then some of the 3 studies biologically used it -- use those -- used 4 those products. It -- you know, if there are -- 5 if there are substance X, Y, Z, A, B, and C that 6 are in there that are causing a problem and 7 carcinogenic, it would have shown up in the 8 studies. 9 Q Do you know that initially in the 10 studies, asbestos, no one could prove that 11 asbestos was carcinogenic? 12 MS. CURRY: 13 Object to the form. 14 A Well, no one could prove smoking was 15 carcinogenic either. It takes time. 16 MS. THOMPSON: 17 Q Well, there's two examples then. 18 (DEPOSITION EXHIBIT NUMBER 26 19 WAS MARKED FOR IDENTIFICATION.) 20 MS. THOMPSON: 21 Q I'm going to show you Exhibit 26, a 22 paper by Dr. Mossman. Do you know Mossman? 23 A I do know Dr. Mossman. Not personally. 24 Q You know her by reputation?</p>

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<p>1 A I think we shared classmates about 20</p> <p>2 years ago.</p> <p>3 Q I -- I won't -- I won't go any further</p> <p>4 with that one.</p> <p>5 The title of this study is "Mechanistic</p> <p>6 in vitro studies: What they have told us about</p> <p>7 carcinogenic properties of elongated mineral</p> <p>8 particles."</p> <p>9 I think we've already established that</p> <p>10 that's not a term that you're particularly</p> <p>11 familiar with. But go ahead and take a minute to</p> <p>12 look at --</p> <p>13 A 26?</p> <p>14 Q -- that paper.</p> <p>15 And I'm going to just read from the</p> <p>16 abstract. "In vitro studies using target and</p> <p>17 effector cells of mineral-induced cancers have</p> <p>18 been critical in determining the mechanisms of</p> <p>19 pathogenesis as well as the properties" --</p> <p>20 A Where are you?</p> <p>21 Q The first sentence of the paper, in the</p> <p>22 abstract.</p> <p>23 A Oh, okay. Thank you.</p> <p>24 Q "In vitro studies" -- we'll start over.</p>	<p>1 Object to the form.</p> <p>2 MS. THOMPSON:</p> <p>3 Q That in vitro studies could be used to</p> <p>4 test that mechanism in EMPs?</p> <p>5 A And she's --</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A -- she's well respected in this area.</p> <p>9 MS. THOMPSON:</p> <p>10 Q We're going to get to Saed's, Dr.</p> <p>11 Saed's work in a minute.</p> <p>12 A Okay.</p> <p>13 Q But wouldn't you agree that that's what</p> <p>14 Dr. Saed started testing in his in vitro studies?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I think the expert report and the paper</p> <p>18 that I read is within this spectrum.</p> <p>19 MS. THOMPSON:</p> <p>20 Q And, just moving down a little bit,</p> <p>21 maybe two-thirds of the way down, "Comparative</p> <p>22 studies using chemical carcinogens showed that</p> <p>23 chemical agents interacted directly with DNA;</p> <p>24 whereas, long EMPs appeared to be promoters of</p>
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<p>1 "In vitro studies using target and</p> <p>2 effector cells of mineral-induced cancers have</p> <p>3 been critical in determining the mechanisms of</p> <p>4 pathogenesis as well as the properties of</p> <p>5 elongated mineral particles, EMPs, important in</p> <p>6 eliciting these responses."</p> <p>7 Dr. Mossman is reporting that in vitro</p> <p>8 studies have been helpful in -- in determining</p> <p>9 this mechanism; right?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Yeah, I think that's what she's saying.</p> <p>13 Yes.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Next sentence, "Historically, in vitro</p> <p>16 models of mutagenesis and immortalized cell lines</p> <p>17 were first used to test the theory that EMPs were</p> <p>18 mutagenic to cells, and genotoxicity, as defined</p> <p>19 as damage to DNA, often culminating in cell</p> <p>20 death, was observed in a dose-dependent fashion</p> <p>21 as responses of many cell types to a number of</p> <p>22 EMPs."</p> <p>23 Does that sound reasonable?</p> <p>24 MS. CURRY:</p>	<p>1 cancer via a number of mechanisms, such as</p> <p>2 inflammation, generation of oxidants and</p> <p>3 instigation of cell division.</p> <p>4 "The multitude of these signaling</p> <p>5 cascades and epigenetic mechanisms of both lung</p> <p>6 cancers and mesotheliomas have been most recently</p> <p>7 studied in normal or telomerase immortalized</p> <p>8 human cells."</p> <p>9 I believe she's saying -- and I'll ask</p> <p>10 you if it's correct -- that particles,</p> <p>11 particularly the elongated particles or fibers,</p> <p>12 have a different mechanism than what is usually</p> <p>13 thought of with chemical carcinogens.</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Is that a --</p> <p>18 A I think that's --</p> <p>19 Q -- reasonable interpretation?</p> <p>20 A You know, again, we've been down this</p> <p>21 road a little bit. This is a review article, so</p> <p>22 she's kind of looking at it globally. But I</p> <p>23 think that what you describe is one of the, sort</p> <p>24 of, take-home messages she's implying.</p>

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<p style="text-align: right;">Page 306</p> <p>1 Q Thank you. I'm honored --</p> <p>2 A Okay. We're done?</p> <p>3 Q -- to have kind of gotten it right.</p> <p>4 A We're done?</p> <p>5 Q No.</p> <p>6 A No?</p> <p>7 Q But I'm gonna shave 10 minutes off for</p> <p>8 that compliment.</p> <p>9 And in the paragraph 2, "General</p> <p>10 Concepts of Cancer Development," first</p> <p>11 paragraph --</p> <p>12 MS. CURRY:</p> <p>13 I'm sorry. The realtime is not --</p> <p>14 (Off the record.)</p> <p>15 A I wouldn't -- we -- can we sort of edge</p> <p>16 towards a break at some point?</p> <p>17 MS. THOMPSON:</p> <p>18 Q Yeah. Let's just go ahead and just</p> <p>19 finish -- almost finished, and then we'll come</p> <p>20 back. That's a good -- good spot.</p> <p>21 (Technical difficulties with realtime.)</p> <p>22 MS. THOMPSON:</p> <p>23 Q Are we okay going forward for a couple</p> <p>24 questions without the realtime?</p>	<p style="text-align: right;">Page 308</p> <p>1 MS. THOMPSON:</p> <p>2 Q Would you agree that some scientists</p> <p>3 tend to like one explanation or the other, and</p> <p>4 the other scientists liking a different</p> <p>5 explanation more than the first one?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A I think that -- I think if you look at</p> <p>9 the investigators in this field, they'll come at</p> <p>10 it, as their expertise, from one direction or the</p> <p>11 other.</p> <p>12 But, you know -- you know, Brook is</p> <p>13 somebody who sees the big picture. I'd like to</p> <p>14 think I do, too. So there's some of us who look</p> <p>15 at the whole thing.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Okay. That's a good explanation.</p> <p>18 But there are scientists doing credible</p> <p>19 work that are kind of in both camps?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I think that's fair.</p> <p>23 MS. THOMPSON:</p> <p>24 Q And then I'm going to that next page.</p>
<p style="text-align: right;">Page 307</p> <p>1 A Yes.</p> <p>2 Q So in number 2, "General Concepts of</p> <p>3 Cancer Development."</p> <p>4 A Uh-huh.</p> <p>5 Q "The development and use of in vitro</p> <p>6 models over time has corresponded with the</p> <p>7 evolution of research and knowledge on cancer</p> <p>8 etiology in humans."</p> <p>9 Would you agree with that statement?</p> <p>10 A I think so, yes.</p> <p>11 Q Next sentence, "While some scientists</p> <p>12 have suggested that the relative contributions of</p> <p>13 DNA replications and mutations are overwhelming</p> <p>14 drivers of cancer risk, others argue that</p> <p>15 experimental and evolutionary data point to</p> <p>16 tissue microenvironment and epigenetic changes as</p> <p>17 being key to tumorigenesis."</p> <p>18 Would you agree with that statement?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I think it's a quantitative issue. So</p> <p>22 in some tumors, mutagenesis takes prominence; in</p> <p>23 others, the microenvironment is important. And</p> <p>24 it's a spectrum.</p>	<p style="text-align: right;">Page 309</p> <p>1 I just have, I think, one more passage I'd like</p> <p>2 to read from this paper and get -- get your</p> <p>3 thoughts.</p> <p>4 The first full paragraph on the second</p> <p>5 page of the article, page 63, "The modern day</p> <p>6 definition of epigenetic mechanisms has evolved</p> <p>7 over time to encompass the fact that alterations</p> <p>8 in the primary structure of DNA do not underlie</p> <p>9 most changes in the development of tumors.</p> <p>10 Accordingly, an epigenetic trait can be a stable</p> <p>11 inheritable phenotype resulting from changes in a</p> <p>12 chromosome without alteration in the DNA</p> <p>13 sequence."</p> <p>14 Do you agree with that statement?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A It strikes me as a little overstated,</p> <p>18 particularly the first part, "...epigenetic</p> <p>19 mechanism evolved over time to encompass the fact</p> <p>20 that alterations in the primary structure do not</p> <p>21 underline most changes." That, I -- I'm not sure</p> <p>22 where that's coming from.</p> <p>23 Now, it may be in a single tumor,</p> <p>24 epigenetic is more important than mutation; but</p>

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<p>1 in others, a mutation would be more important.</p> <p>2 Again, when we treat patients, as you</p> <p>3 know, we're sequencing everything, and that's not</p> <p>4 looking at epigenetics. It's looking at</p> <p>5 mutations. Tumors are riddled with these things.</p> <p>6 In fact, the problem that we face is what's the</p> <p>7 driver versus the passenger.</p> <p>8 MS. THOMPSON:</p> <p>9 Q So in a particular tumor, either</p> <p>10 mechanism -- well, it could be either mechanism</p> <p>11 or both in various amount of contribution. Is</p> <p>12 that a fair statement?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A I think it's a fair statement.</p> <p>16 MS. THOMPSON:</p> <p>17 Let's take a break.</p> <p>18 VIDEOGRAPHER:</p> <p>19 Off the record at 3:26 p.m.</p> <p>20 (OFF THE RECORD.)</p> <p>21 VIDEOGRAPHER:</p> <p>22 We're back on the record at 3:45 p.m.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Dr. Birrer, let's talk about Dr. Saed</p>	<p>1 So -- and then he did a fair amount of work on</p> <p>2 adhesion, pure adhesion.</p> <p>3 MS. THOMPSON:</p> <p>4 Q And his adhesion work involved</p> <p>5 oxidative stress in adhesions, didn't it?</p> <p>6 A I think he would argue that. I</p> <p>7 didn't -- it wasn't clear to me from my</p> <p>8 perspective. But that's a component of what he</p> <p>9 looked at. The unifying factor for me is that</p> <p>10 it's gynecologic.</p> <p>11 Q Okay.</p> <p>12 A Okay.</p> <p>13 Q And he has 234 peer-reviewed</p> <p>14 publications; correct? Oh, no. Take that back.</p> <p>15 A 136, isn't it?</p> <p>16 Q 136. I was looking --</p> <p>17 A 136. Correct.</p> <p>18 Q What is oxidative stress?</p> <p>19 A Well, that's -- that's a biochemical</p> <p>20 state, if you will, within -- we -- we consider</p> <p>21 as biologists within cells. It exists in all</p> <p>22 cells. And it's a balance between ox- -- you</p> <p>23 know, oxidizing effects and antioxidants.</p> <p>24 As a term, oxidative, of course, it's a</p>
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<p>1 and his research. Okay?</p> <p>2 A Okay.</p> <p>3 Q Did you look at Dr. Saed's CV?</p> <p>4 A I did.</p> <p>5 Q I'll go ahead and mark that as exhibit</p> <p>6 27.</p> <p>7 (DEPOSITION EXHIBIT NUMBER 27 WAS</p> <p>8 MARKED FOR IDENTIFICATION.)</p> <p>9 A Thank you.</p> <p>10 MS. THOMPSON:</p> <p>11 Q And looking at his CV, would you agree</p> <p>12 that the focus of his lab has been the study of</p> <p>13 oxidative stress and its biological effects?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A Let me refresh my -- refresh my memory</p> <p>17 on this a little bit.</p> <p>18 So I think, you know, looking at, if I</p> <p>19 recall correctly -- I would say that he -- one of</p> <p>20 his -- one of the components of what he looks at</p> <p>21 is oxidative stress. If you look at his career,</p> <p>22 he's been fairly broadly over a broad number of</p> <p>23 topics. He's looked at, like, gene amplification</p> <p>24 in certain tumors, mostly in GYN, I might add.</p>	<p>1 chemistry definition. But this one, I think what</p> <p>2 he means by oxidative stress is it's -- or what</p> <p>3 you're implying is it's a biologic process.</p> <p>4 Okay?</p> <p>5 Q And is it fair to say that at least</p> <p>6 some scientists believe that oxidative stress</p> <p>7 plays a role in the etiology of many types of</p> <p>8 cancers?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I think it's safe to say oxidative</p> <p>12 stress has been investigated and associated with</p> <p>13 some cancers.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Okay. Do you have an opinion on the</p> <p>16 role of oxidative stress in the initiation of</p> <p>17 ovarian cancer?</p> <p>18 A I think that's unresolved at this</p> <p>19 point. Most of the data that I know of for</p> <p>20 oxidative stress, a lot of the data is in ovarian</p> <p>21 tumors. They're already established.</p> <p>22 Q Are -- would you say there are</p> <p>23 scientists on both sides of that issue?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Would you define that, please?</p> <p>3 MS. THOMPSON:</p> <p>4 Q The importance of oxidative stress in</p> <p>5 the pathogenesis of ovarian cancer.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A I think it's an area of active</p> <p>9 investigation.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Okay. So you would agree that</p> <p>12 researchers who believe that oxidative stress</p> <p>13 plays a role in the initiation or progression of</p> <p>14 ovarian cancer are not unreasonable?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A It's a generalization that I can't</p> <p>18 comment on. Which researchers?</p> <p>19 MS. THOMPSON:</p> <p>20 Q Okay. But they wouldn't automatically</p> <p>21 be unreasonable?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Because they believe --</p>	<p>1 A Yeah.</p> <p>2 Q Let's go to your report.</p> <p>3 A We're done with the CV?</p> <p>4 Q I think so.</p> <p>5 A Are you going to the report or the</p> <p>6 paper?</p> <p>7 Q I'm going to your report first.</p> <p>8 A Yeah. Okay.</p> <p>9 Q And then the report, I'll probably go</p> <p>10 to the -- this paper next.</p> <p>11 So in your report, going to page --</p> <p>12 actually, let's start on page 19.</p> <p>13 A Uh-huh.</p> <p>14 Q And you have the big heading, Section</p> <p>15 4 --</p> <p>16 A Uh-huh.</p> <p>17 Q -- Dr. Saed's Plaintiff-Funded</p> <p>18 Research.</p> <p>19 Did you write that heading?</p> <p>20 A Yes.</p> <p>21 Q What is the basis for calling</p> <p>22 Dr. Saed's research plaintiff-funded?</p> <p>23 A My understanding is after he submitted</p> <p>24 his -- the preprint said -- revealed,</p>
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<p>1 MS. THOMPSON:</p> <p>2 Q Because they believe in the importance</p> <p>3 of oxidative stress.</p> <p>4 A I don't think so.</p> <p>5 Q They wouldn't automatically be</p> <p>6 credible -- not credible?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A That would depend on the work they've</p> <p>10 done --</p> <p>11 MS. THOMPSON:</p> <p>12 Q Okay.</p> <p>13 A -- in their experiments.</p> <p>14 Q All right. And they wouldn't</p> <p>15 automatically be uninformed. Would you agree</p> <p>16 with that?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 MS. THOMPSON:</p> <p>20 Q It would depend?</p> <p>21 A We need to look at their -- their</p> <p>22 scientific investigation to determine if they're</p> <p>23 uninformed.</p> <p>24 Q Okay.</p>	<p>1 essentially, nothing, and then the actual paper,</p> <p>2 I believe, said that he was -- that he was a</p> <p>3 consultant and an expert witness.</p> <p>4 Q Does that mean to you plaintiff-funded</p> <p>5 research?</p> <p>6 A Well, I mean, that was a separate</p> <p>7 issue, that there was money actually flowing into</p> <p>8 his lab.</p> <p>9 Q What -- what is your basis for saying</p> <p>10 there was money flowing into his lab?</p> <p>11 A I think that's what we -- I saw in</p> <p>12 his -- let me see. Hang on -- his deposition.</p> <p>13 Q What did his deposition say about that?</p> <p>14 A I'd have to refresh my memory. Do you</p> <p>15 have it?</p> <p>16 Q Do you recall that the funding for the</p> <p>17 research came from his university lab funds and</p> <p>18 that he was paid for his time as a consultant?</p> <p>19 Does that sound right?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I think I remember that the exchange</p> <p>23 was he was saying his departmental monies and</p> <p>24 then he was asked, okay, where does that come</p>

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<p>1 from, and he couldn't answer that and said, well,</p> <p>2 I don't know. And the problem is --</p> <p>3 MS. THOMPSON:</p> <p>4 Q That's -- that's just not right.</p> <p>5 A Okay. Can we look at it?</p> <p>6 Q And I don't have his deposition here.</p> <p>7 But to put as your heading "Dr. Saed's</p> <p>8 Plaintiff-Funded Research" without really knowing</p> <p>9 the situation is -- doesn't sound like something</p> <p>10 you would write in a paper.</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A No.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Does it?</p> <p>16 A In a peer-review paper?</p> <p>17 Q Right.</p> <p>18 A No. But this is not a peer-review</p> <p>19 paper.</p> <p>20 Q Well, did you not --</p> <p>21 A The fact that he has plaintiff-funded</p> <p>22 research and hasn't really revealed it is a huge</p> <p>23 issue.</p> <p>24 Q What -- what's your basis for saying he</p>	<p>1 A Yeah.</p> <p>2 Q -- the published manuscript.</p> <p>3 (DEPOSITION EXHIBIT NUMBER 28</p> <p>4 WAS MARKED FOR IDENTIFICATION.)</p> <p>5 MS. THOMPSON:</p> <p>6 Q Have you seen that?</p> <p>7 A I have seen this, yes.</p> <p>8 Q And you're talking about the conflict</p> <p>9 of interest statement; correct?</p> <p>10 A Yes.</p> <p>11 Q Doctor -- I'm sorry. Exhibit 28 is his</p> <p>12 manuscript.</p> <p>13 And the declaration of conflicting</p> <p>14 interests.</p> <p>15 A Uh-huh.</p> <p>16 Q "Dr. Saed has served as a paid</p> <p>17 consultant and expert witness in the talcum</p> <p>18 litigation."</p> <p>19 Is -- is that a reason to make the</p> <p>20 heading of your report "Dr. Saed's</p> <p>21 Plaintiff-Funded Research"?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Well, I think -- so I guess the</p>
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<p>1 hasn't revealed it?</p> <p>2 A It's not on the manuscript.</p> <p>3 Q The manuscript that's published?</p> <p>4 A Yeah.</p> <p>5 Q Well, let's look at the manuscript.</p> <p>6 So is your criticism that it's not on</p> <p>7 the manuscript or that it's plaintiff-funded</p> <p>8 research?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Well, it's two. Yeah.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Because there's nothing in that heading</p> <p>14 that says this research -- I just -- I just don't</p> <p>15 understand the heading "Dr. Saed's</p> <p>16 Plaintiff-Funded Research."</p> <p>17 A So I think there's two components</p> <p>18 there. One is I think it is an issue that --</p> <p>19 that there's dollars flowing to do some of that</p> <p>20 research. I think that raises an issue of how</p> <p>21 objective he is.</p> <p>22 And then a second issue is at a minimum</p> <p>23 it should be revealed.</p> <p>24 Q Now, this is --</p>	<p>1 question is: Is this accurate? This was not on</p> <p>2 the preprint. This was not on the --</p> <p>3 MS. THOMPSON:</p> <p>4 Q This is what's published; right?</p> <p>5 A That's not a preprint.</p> <p>6 Q Do you know what correspondence</p> <p>7 Dr. Saed -- or what -- what are you speaking of?</p> <p>8 The submission to --</p> <p>9 A The paper was submitted to GYN ONC and</p> <p>10 rejected, and then the paper was submitted to --</p> <p>11 this is Reproductive Sciences. And those --</p> <p>12 again, do we have a copy of that? I got the</p> <p>13 preprint which stated -- which said none of that.</p> <p>14 Q Okay. We'll get to that in a minute.</p> <p>15 A This was only put on afterwards.</p> <p>16 Q Do you have any -- do you have any</p> <p>17 knowledge of the conversations that Dr. Saed had</p> <p>18 with the editors of either journal as to what</p> <p>19 should go on his conflict of interest statement</p> <p>20 with the situation that he was in?</p> <p>21 Do you have any knowledge of that</p> <p>22 whatsoever?</p> <p>23 A Verbal conversations.</p> <p>24 Q Written and verbal conversations.</p>

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<p>1 A So verbal conversations, I don't know. 2 I'm not there. The written interactions between 3 the journals, we had copies of. 4 Q And you think what you saw was 5 sufficient enough for you to state "Dr. Saed's 6 Plaintiff-Funded Research" in this report? 7 A I think so, yeah. It's a big issue. 8 Q Wouldn't a scientist want to look at 9 the research before they call it plaintiff-funded 10 research? 11 MS. CURRY: 12 Object to the form. 13 MS. THOMPSON: 14 Q Doesn't that automatically indicate 15 that you think the research is biased? 16 A Well, again, I -- so as this document 17 evolved, I looked at the science and I -- I was 18 chagrined. That then put this into context. I 19 think -- I think it's a concern. 20 Q Well, couldn't you have just said 21 "Dr. Saed's Research" and then written your 22 comments without making the heading 23 "Plaintiff-Funded Research"? 24 MS. CURRY:</p>	<p>1 actual research in the lab, is that -- 2 A I can't quite -- 3 MS. CURRY: 4 Object to the form. 5 A I can't quite remember. 6 MS. THOMPSON: 7 Q Okay. 8 A But -- 9 Q So -- 10 A It was a big position. 11 Q So do you think that heading is fair? 12 A I think it is. 13 Q Do you remember Dr. Saed's testimony 14 that he would have been -- that he would have 15 been happy to do the same research had 16 Johnson & Johnson approached him on the same 17 topic? 18 MS. CURRY: 19 Object to the form. 20 A I can't remember. Do you have the 21 deposition? 22 MS. THOMPSON: 23 Q I don't. 24 A Okay.</p>
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<p>1 Object to the form. 2 A I could have. 3 MS. THOMPSON: 4 Q Isn't there plenty of research being 5 done that's funded by various entities that's 6 quality research? 7 A So there's a broad spectrum of -- 8 Q Answer my question. Isn't there a lot 9 of research that's being done funded by various 10 entities that's quality research? 11 A As a general statement? 12 Q Uh-huh. 13 A Yes. 14 Q Yes. 15 And funding has to come from somewhere; 16 correct? 17 MS. CURRY: 18 Object to the form. 19 A Can't work without money. 20 MS. THOMPSON: 21 Q And, again, you may not remember this 22 from Dr. Saed's deposition, but his testimony 23 that there was no money coming from the 24 litigation into his lab funds which paid for the</p>	<p>1 Q You don't remember that he said his 2 research would have been the same and he would 3 have been willing to do it for Johnson & Johnson? 4 MS. CURRY: 5 Object to the form. 6 A I can't remember it. 7 MS. THOMPSON: 8 Q To your knowledge, has 9 Johnson & Johnson approached any researcher about 10 doing studies that would help understand whether 11 talcum powder has any molecular effects? 12 MS. CURRY: 13 Object to the form. 14 A He certainly didn't approach me. But 15 I -- I think I recall in the past they've had a 16 J & J-funded study, I think, which was 17 acknowledged on the paper. 18 MS. THOMPSON: 19 Q A molecular study? 20 A I can't say that. 21 Q If you had that, I would certainly like 22 to see it. So, to your knowledge, 23 Johnson & Johnson hasn't asked -- has not asked 24 any researchers to look at the molecular effects</p>

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<p>1 of talcum powder in cell culture?</p> <p>2 A Outside the company, right?</p> <p>3 Q How about inside the company?</p> <p>4 A I don't know. I don't know what goes</p> <p>5 on there.</p> <p>6 Q Did you ask the attorneys --</p> <p>7 A No.</p> <p>8 Q -- if Johnson & Johnson had done any</p> <p>9 studies that you could look at and --</p> <p>10 A No.</p> <p>11 Q -- criticize in the same way you did</p> <p>12 Dr. Saed?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Well, I wouldn't rely on those, the</p> <p>16 internal documents. I would have to know the</p> <p>17 context.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Well, can't you --</p> <p>20 A But this is -- this is peer-reviewed.</p> <p>21 Q Can't you find the context of -- of</p> <p>22 what studies have been done by the company?</p> <p>23 A I think that would be hard.</p> <p>24 Q So it would be of no interest to you</p>	<p>1 A No.</p> <p>2 Q Did you have any conversations by</p> <p>3 email, text or phone with the editors or any</p> <p>4 other representatives of the journal regarding</p> <p>5 this paper?</p> <p>6 A No.</p> <p>7 Q Did you have any conversations with</p> <p>8 Johnson & Johnson regarding the manuscript while</p> <p>9 it was under review?</p> <p>10 A No.</p> <p>11 Q Did you have any conversations with any</p> <p>12 of the reviewers on the paper?</p> <p>13 A I don't know who the reviewers were.</p> <p>14 Q Okay.</p> <p>15 A Yeah.</p> <p>16 Q But you have seen the reviewer comments</p> <p>17 from GYN Oncology; correct?</p> <p>18 A I did.</p> <p>19 Do we have a copy?</p> <p>20 MS. CURRY:</p> <p>21 I think she's --</p> <p>22 MS. THOMPSON:</p> <p>23 Yeah, I'm --</p> <p>24 (DEPOSITION EXHIBIT NUMBER 29 WAS</p>
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<p>1 one way or the other whether Johnson & Johnson</p> <p>2 had done any molecular studies on talcum powder</p> <p>3 and its effect on -- on tissue or cells?</p> <p>4 A Correct.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Correct.</p> <p>8 MS. THOMPSON:</p> <p>9 Q When did you -- is the paper that we</p> <p>10 just marked as exhibit --</p> <p>11 A 28.</p> <p>12 Q -- 28, was that paper peer-reviewed?</p> <p>13 A This is a peer-review journal.</p> <p>14 Q And when did you first see the</p> <p>15 unpublished manuscript?</p> <p>16 A I am gonna really -- I'm stretching on</p> <p>17 this. I think it was about -- let's say a month</p> <p>18 or two before this.</p> <p>19 Q Okay. So a couple months ago?</p> <p>20 A Yeah.</p> <p>21 Q Do you review papers for Gynecologic</p> <p>22 Oncology?</p> <p>23 A I do.</p> <p>24 Q Were you asked to review this paper?</p>	<p>1 MARKED FOR IDENTIFICATION.)</p> <p>2 MS. THOMPSON:</p> <p>3 Q I'm gonna go ahead and mark Exhibit 29.</p> <p>4 29 will be the reviewer comments from the journal</p> <p>5 Gynecologic Oncology.</p> <p>6 A Uh-huh.</p> <p>7 Q And again, that journal is the</p> <p>8 journal -- or maybe we haven't discussed this --</p> <p>9 it's the journal for SGO, the Society of</p> <p>10 Gynecologic Oncologists; correct?</p> <p>11 A Correct.</p> <p>12 Q Did I give you a highlighted copy?</p> <p>13 A You did, actually. It's very helpful.</p> <p>14 Q Let me switch that. I'm sure it was.</p> <p>15 Actually, it probably wasn't.</p> <p>16 A I've seen these before.</p> <p>17 (DEPOSITION EXHIBIT NUMBER 30 WAS</p> <p>18 MARKED FOR IDENTIFICATION.)</p> <p>19 MS. THOMPSON:</p> <p>20 Q And then I'm gonna also, at the same</p> <p>21 time, give you Exhibit 30, which is the reviewer</p> <p>22 comments from Reproductive Sciences.</p> <p>23 A All right.</p> <p>24 Q Both are peer-reviewed journals, as you</p>

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<p>1 mentioned; right?</p> <p>2 A Yes. Difference in impact, but both</p> <p>3 peer review.</p> <p>4 Q And they have a -- a different audience</p> <p>5 readership, too, wouldn't you agree?</p> <p>6 A I would agree, yes.</p> <p>7 MS. CURRY:</p> <p>8 Do you have another copy of Exhibit 30?</p> <p>9 MS. THOMPSON:</p> <p>10 Yes. I'm sorry.</p> <p>11 MS. CURRY:</p> <p>12 Thank you.</p> <p>13 MS. THOMPSON:</p> <p>14 That good?</p> <p>15 MS. CURRY:</p> <p>16 Yes.</p> <p>17 MS. THOMPSON:</p> <p>18 Q In your report, you make the statement</p> <p>19 "Unsurprisingly, this manuscript has serious</p> <p>20 methodologic, experimental and analysis flaws."</p> <p>21 A I'm sorry. Are you in the beginning of</p> <p>22 this last paragraph of 19?</p> <p>23 Q No.</p> <p>24 A No?</p>	<p>1 Q Reading the letter to Dr. Saed:</p> <p>2 "Your paper, referenced above, has now</p> <p>3 been reviewed by at least two reviewers -- has</p> <p>4 now been reviewed by at least two experts in the</p> <p>5 field and the editors. Based on the reviewer</p> <p>6 comments, we must inform you that while your work</p> <p>7 is not without merit, we are unable to accept</p> <p>8 your manuscript for publication in Gynecologic</p> <p>9 Oncology. In the last year we have seen a</p> <p>10 significant increase in the number of manuscripts</p> <p>11 submitted to the journal, and, as a result, we</p> <p>12 are now accepting less than 20 percent of the</p> <p>13 manuscripts submitted to the Gynecologic</p> <p>14 Oncology."</p> <p>15 Certainly in that first paragraph there</p> <p>16 were -- there was no language that resembles this</p> <p>17 manuscript has serious methodologic, experimental</p> <p>18 and analysis flaws, is there?</p> <p>19 A No.</p> <p>20 Q The second paragraph, "We have attached</p> <p>21 the comments of the reviewers below in order for</p> <p>22 you to understand the basis for our decision. We</p> <p>23 hope that their thoughtful comments will help you</p> <p>24 in your future studies and possibly with</p>
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<p>1 Q It's in another spot. Let me find it.</p> <p>2 A Maybe it's under the paper.</p> <p>3 Q Yeah. Page 24.</p> <p>4 A Yep. Yeah.</p> <p>5 Q "Unsurprisingly, this manuscript has</p> <p>6 serious methodologic, experimental and analysis</p> <p>7 flaws."</p> <p>8 A Uh-huh.</p> <p>9 Q Did you see any language to that effect</p> <p>10 in the peer-reviewers' comments?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A One second.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Well, let me just ask you.</p> <p>16 Did those words appear in the reviewer</p> <p>17 comments?</p> <p>18 A No, I don't think so.</p> <p>19 Q Okay.</p> <p>20 A Yeah.</p> <p>21 Q So let's -- I want to actually go</p> <p>22 through the reviewer comments. We'll start with</p> <p>23 Gynecologic Oncology.</p> <p>24 A Yep.</p>	<p>1 submission to another journal.</p> <p>2 "Please note that a revised version of</p> <p>3 the current manuscript should not be submitted</p> <p>4 for another review to Gynecologic Oncology."</p> <p>5 There's certainly no language in that</p> <p>6 paragraph that resembles serious methodologic,</p> <p>7 experimental and analysis flaws, is there?</p> <p>8 A No.</p> <p>9 Q And the reviewers actually encouraged</p> <p>10 Dr. Saed to submit the article to another</p> <p>11 journal; correct?</p> <p>12 A Well, this isn't the reviewer. This is</p> <p>13 the editor.</p> <p>14 Q The editor?</p> <p>15 A Yeah.</p> <p>16 Q The editors?</p> <p>17 A Yeah. And this is boilerplate. You'd</p> <p>18 always get this. They're not --</p> <p>19 Q Well, I'm just asking you for the --</p> <p>20 for what the -- what the letter says.</p> <p>21 A Yeah. Yeah.</p> <p>22 Q "The critique of this letter in no way</p> <p>23 implies a lack of interest in this area of</p> <p>24 research and we invite you to submit your future</p>

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<p>1 work to the journal." 2 Is that what the letter from 3 Dr. Bristow, the editor says? 4 A Correct. 5 Q And, in fact, Dr. Saed has published 6 several times in this journal previously. 7 Are you aware of that? 8 A Yeah. I believe so, yeah. 9 Q So let's go ahead and go through the -- 10 the reviewer comments. Reviewer number 1 -- 11 And, as you testified, you don't know 12 who these reviewers are; correct? 13 A I don't. 14 Q Reviewer 1, in his summary of 15 Dr. Saed's paper, says "The stated objective of 16 the study by Fletcher and colleagues is to 17 determine the effects of talc on expression of 18 key inflammatory and redox markers in ovarian 19 cancer and normal cell lines. Normal ovarian and 20 EOC cells were treated with various doses of talc 21 for 48 hours. Levels of CA-125 and selected key 22 redox enzymes were measured using realtime P -- 23 RT-PCR and ELISA." 24 Is that an accurate statement of what</p>	<p>1 MS. THOMPSON: 2 Q Right. 3 A Yeah. 4 Q "This is an important but controversial 5 topic in need of rigorous scientific inquiry." 6 Why is this a controversial topic, in 7 your mind? 8 MS. CURRY: 9 Object to the form. 10 MS. THOMPSON: 11 Q Or is it a controversial topic to you? 12 A I would assume they're referring to the 13 potential role of talc in ovarian cancer. But 14 I'm -- again, it's speculative. 15 Q Okay. 16 A I'm guessing. 17 Q So you wouldn't know why it would be 18 considered controversial? 19 MS. CURRY: 20 Object to the form. 21 A No. Not -- not in -- no, vis-à-vis 22 from what the reviewer's saying. 23 MS. THOMPSON: 24 Q "The current in vitro study does" --</p>
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<p>1 the objective of the study was? 2 MS. CURRY: 3 Object to the form. 4 A I think that's -- I think that's a 5 little terse, but it covers the bases. 6 MS. THOMPSON: 7 Q And then beginning with the reviewer 8 comments, reviewer number 1 says "Overall, this 9 is a well-written manuscript and the conclusions 10 are supported by the results." 11 Do you disagree with that comment by 12 reviewer number 1? 13 A That's very generous. I don't agree 14 with it. Particularly the latter part. 15 Q But at least that's what the 16 reviewer -- 17 A Correct. 18 Q -- who was -- you would think was 19 chosen because of their expertise in the field, 20 those are the reviewer comments regarding 21 Dr. Saed's paper; correct? 22 MS. CURRY: 23 Object to the form. 24 A For reviewer 1.</p>	<p>1 reading on, "The current in vitro study does 2 provide novel information, but there are also 3 some important limitations described below." 4 Would you agree that it's common to 5 have a back-and-forth with a reviewer and author 6 before publication of a paper? 7 MS. CURRY: 8 Object to the form. 9 A Some papers are accepted de novo, but 10 it's unusual. Usually there are criticisms and, 11 then you'd have to revise. Sometimes if it's 12 Cancer Cell, it goes back and forth for two 13 years. 14 MS. THOMPSON: 15 Q The reviewer number 1 in -- in the 16 bullet point number 1, said "The significance of 17 the study would be greatly enhanced if a mouse 18 model corroborated the cell line findings." 19 I would -- I'm guessing you're gonna 20 agree with that statement? 21 A I do. 22 Q But you would also agree, I think, that 23 oftentimes you -- a researcher would start with 24 an in vitro study; correct?</p>

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<p style="text-align: right;">Page 338</p> <p>1 A Frequently.</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And what would the reasons for that be?</p> <p>6 A It's usually easier.</p> <p>7 Q Less costly?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A By definition.</p> <p>11 MS. THOMPSON:</p> <p>12 Q And could be completed in less time?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Usually, yeah.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Do you -- do you have any idea or</p> <p>18 knowledge of what experiments Dr. Saed is</p> <p>19 currently doing in the -- in the area of talcum</p> <p>20 powder and its biologic effects?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A I don't.</p> <p>24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 340</p> <p>1 A I'm not done with my response.</p> <p>2 So let me finish the first statement.</p> <p>3 Q Okay.</p> <p>4 A I think if you could show a phenom- --</p> <p>5 if you could show the biologic effects in a mouse</p> <p>6 model, then it's much stronger data, regardless</p> <p>7 of the cell lines.</p> <p>8 I don't -- I would agree I don't think</p> <p>9 Dr. Saed said much about CA-125 being -- being</p> <p>10 involved in ovarian cancer development, and</p> <p>11 that's the point. I don't understand, and I</p> <p>12 think a lot of other of us who have looked at</p> <p>13 this, don't understand what the value is of the</p> <p>14 increase in CA-125.</p> <p>15 Q Do you know that when Dr. Saed</p> <p>16 presented the initial data at the meeting, that</p> <p>17 the attendees requested that he perform CA-125</p> <p>18 and that's why he performed it? Do you remember</p> <p>19 seeing that in his deposition?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I didn't see that. Which meeting was</p> <p>23 this? Do you know?</p> <p>24 MS. THOMPSON:</p>
<p style="text-align: right;">Page 339</p> <p>1 Q In this reviewer's opinion, "The cell</p> <p>2 line studies alone and the increase in CA-125,</p> <p>3 while intriguing, are not sufficiently</p> <p>4 convincing."</p> <p>5 Would you agree with that statement?</p> <p>6 A Absolutely.</p> <p>7 Q And so a mouse model corroboration of</p> <p>8 the findings would be -- would enhance the</p> <p>9 results; correct?</p> <p>10 A Not from my perspective. And I'm not</p> <p>11 so sure this reviewer's implying that. I think</p> <p>12 there's a real question anything can be</p> <p>13 interpreted from the cell line studies, and any</p> <p>14 increase in CA-125 is meaningless because CA-125</p> <p>15 is a marker.</p> <p>16 So I think --</p> <p>17 Q Well, wait a minute.</p> <p>18 Did Dr. Saed say anything about</p> <p>19 CA-125 --</p> <p>20 MS. CURRY:</p> <p>21 Are you done with your response?</p> <p>22 MS. THOMPSON:</p> <p>23 Q -- being the significance with the</p> <p>24 findings?</p>	<p style="text-align: right;">Page 341</p> <p>1 Q SRI, 2018.</p> <p>2 A Okay.</p> <p>3 Q Society of Reproductive Investigators.</p> <p>4 A And did they indicate -- anybody</p> <p>5 indicate what the purpose of that was?</p> <p>6 Q I can't tell you that.</p> <p>7 But, listen, I'm -- I'm just reading</p> <p>8 the reviewer's comments --</p> <p>9 A Yeah.</p> <p>10 Q -- without either one of us trying to</p> <p>11 speculate on what he means.</p> <p>12 But the statement is "The significance</p> <p>13 of this study would be greatly enhanced if a</p> <p>14 mouse model corroborated the cell line findings."</p> <p>15 So there were cell line findings to be</p> <p>16 corroborated; correct?</p> <p>17 A Correct.</p> <p>18 Q The reviewer number 1 also said "The</p> <p>19 significance of SNP alterations" -- that's SNP,</p> <p>20 all capitalized -- "should be further clarified."</p> <p>21 And I think you would agree with that;</p> <p>22 correct?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 A I strongly agree with that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And the viewer -- reviewer commented,</p> <p>4 "The first bulleted highlight, Oxidative Stress,</p> <p>5 is a key mechanism to the initiation and</p> <p>6 progression of ovarian cancer is not supported by</p> <p>7 this investigation and should be omitted."</p> <p>8 Does the reviewer comment on why that</p> <p>9 should be -- that line should be omitted, other</p> <p>10 than it wasn't supported by this investigation</p> <p>11 with talcum powder?</p> <p>12 A No. It would be speculative. It's --</p> <p>13 it's as you read it.</p> <p>14 Q Okay. Do you know that -- that</p> <p>15 virtually that exact statement has been published</p> <p>16 in this same journal in the past by Dr. Saed and</p> <p>17 others?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A As a stand-alone statement?</p> <p>21 MS. THOMPSON:</p> <p>22 Q Yeah. Yes.</p> <p>23 A Yeah. I don't think that addresses</p> <p>24 what the reviewer is saying.</p>	<p>1 Object to the form.</p> <p>2 A And it's -- and it's -- I don't know --</p> <p>3 just one comment that it's more detailed, which</p> <p>4 makes someone like me as a third party look at</p> <p>5 and say, well, they actually read the paper. I'd</p> <p>6 worry a little about if reviewer 1 didn't read it</p> <p>7 carefully enough.</p> <p>8 MS. THOMPSON:</p> <p>9 Q But you have no idea what he did?</p> <p>10 A I've been speculating all day.</p> <p>11 Q Okay. All right. And then the first</p> <p>12 sentence of reviewer number 2, "While the authors</p> <p>13 compellingly show changes in several key enzymes</p> <p>14 recognizing redox potential in cells exposed to</p> <p>15 talc, their data do not show, despite the</p> <p>16 author's claim, any evidence that these cells are</p> <p>17 transformed."</p> <p>18 Do you agree with reviewer number 2 in</p> <p>19 that statement?</p> <p>20 A I agree.</p> <p>21 Q Second sentence, "Specifically, no</p> <p>22 experiments documenting changes in cell survival</p> <p>23 proliferation are resistant to apoptosis have</p> <p>24 been performed."</p>
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<p>1 Q Yeah.</p> <p>2 A The reviewer's saying it's not</p> <p>3 supported by --</p> <p>4 Q And that's the point I was trying to</p> <p>5 make.</p> <p>6 So -- so you would agree that it</p> <p>7 doesn't sound like it's the statement that's at</p> <p>8 issue; it's whether the talcum powder studies are</p> <p>9 supportive of that statement?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Well, the way it's phrased here -- the</p> <p>13 way it's phrased here, I agree. Yeah.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Let's go to reviewer number 2.</p> <p>16 A Uh-huh.</p> <p>17 Q And reviewer number 2 gives a similar</p> <p>18 summary, perhaps with a little more detail.</p> <p>19 A Yeah.</p> <p>20 Q But would you agree it's an accurate</p> <p>21 description of what the objectives of the study</p> <p>22 were?</p> <p>23 A It is.</p> <p>24 MS. CURRY:</p>	<p>1 And that's correct; right?</p> <p>2 A So he does show what he thinks is</p> <p>3 proliferation, if I recall correctly. I believe</p> <p>4 it's an MMT -- MTT assay.</p> <p>5 Q Well, those experiments were done</p> <p>6 following reviewer number 2's recommendation. Is</p> <p>7 that your understanding?</p> <p>8 A Well, I --</p> <p>9 Q In the --</p> <p>10 A Yeah.</p> <p>11 Q In the first manuscript. Do you</p> <p>12 remember that?</p> <p>13 A You could be right. I don't have it</p> <p>14 pre- -- I don't have that version in front of me.</p> <p>15 Q You may have to just take my word for</p> <p>16 that.</p> <p>17 MS. CURRY:</p> <p>18 I have a copy of it if you need it.</p> <p>19 MS. THOMPSON:</p> <p>20 No. It's not too -- I don't think it's</p> <p>21 too much --</p> <p>22 A But I can say, in particular, cell</p> <p>23 survival resistant apoptosis, I don't think has</p> <p>24 been effectively performed.</p>

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<p style="text-align: right;">Page 346</p> <p>1 MS. THOMPSON: 2 Object. That didn't answer a question. 3 Nonresponsive. 4 Q Next sentence, "Consequently, neither 5 tumor initiation nor progression is documented in 6 this study as opposed to the statement in 7 highlight number 1 and elsewhere." 8 "While changes in redox potential play 9 an important role in tumor biology in general, 10 the present data are insufficient to back up the 11 claim that talc is central to the development of 12 ovarian cancer." 13 Did Dr. Saed make a claim that talcum 14 is central to the development of ovarian cancer, 15 that you recall? 16 A I don't recall him saying that. 17 Q I don't either. 18 "Other comments: The introduction 19 should be better organized with shorter 20 description of the general features of ovarian 21 cancer, replaced by a brief overview of redox 22 proteins in cancer, followed by a discussion of 23 their role in ovarian cancer." 24 That's more a style issue. Would you</p>	<p style="text-align: right;">Page 348</p> <p>1 Q Where in -- where in Dr. Saed's paper 2 does it say this paper shows talcum powder 3 transforms ovarian cells? 4 A Do we have the original? 5 Q We're looking at the published 6 manuscript. 7 MS. CURRY: 8 But the comments are based on the -- 9 A This is the one published in -- and you 10 already told me he changed some of the 11 experiments. 12 MS. THOMPSON: 13 Q Was -- shouldn't your critique be the 14 published paper? 15 A Well, you're asking me to review this; 16 right? 17 Q Okay. We can pull out the -- we can 18 pull out the published manuscript. 19 But certainly in the published paper, 20 there are no claims that cells are transformed, 21 are there? 22 A Well, let's take a look. 23 Q It's certainly not in the abstract or 24 in the conclusion -- in the summary, is it?</p>
<p style="text-align: right;">Page 347</p> <p>1 agree? 2 MS. CURRY: 3 Object to the form. 4 A Make it -- make it more readable, yeah. 5 MS. THOMPSON: 6 Q And, then, the -- finally, "The fact 7 that SNPs were changed following such short 8 exposure to talcum is surprising and makes one 9 wonder what the biological effects of such change 10 might be." 11 And those are the reviewer comments 12 from Gynecologic Oncology; correct? 13 A Correct. 14 Q Did the peer-reviewers raise concerns 15 about Dr. Saed's, in your words, unsubstantiated 16 assumptions? 17 A Well, I -- I think it's implicit in 18 some of the comments. 19 Q That there are unsubstantiated 20 assumptions? 21 A So -- so I think if you read the second 22 paragraph of the second reviewer -- remember, 23 this paper basically says that talc transforms 24 ovarian cancer cells.</p>	<p style="text-align: right;">Page 349</p> <p>1 A I'm just getting through the discussion 2 a little bit. It may be -- may be buried in 3 there or may be an implication that the soft 4 argarose cloning is reflective of only the 5 changes. 6 Q Dr. Saed's paper does not claim that 7 the cells were transformed, does it? 8 A Let me look through it, then. 9 Q Okay. Let's go off the record. 10 VIDEOGRAPHER: 11 Off the record at 4:23 p.m. 12 (OFF THE RECORD.) 13 VIDEOGRAPHER: 14 We're back on the record at 4:24 p.m. 15 A Page 7 on the bottom. "In this study 16 we've shown that talc enhances cellular 17 proliferation, induces inhibition of apoptosis 18 and C-cells" -- 19 MS. CURRY: 20 Gotta go slow for Lois. 21 THE WITNESS: 22 Oh. 23 -- "but, more importantly, in normal 24 cells, suggesting talc is a stimulus to the</p>

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<p style="text-align: right;">Page 350</p> <p>1 development of an oncogenic phenotype." 2 MS. THOMPSON: 3 Q That doesn't say the cells were 4 transformed, does it? 5 A I think for those of us in the field 6 that implies transformation. 7 Q Well, it certainly doesn't state -- 8 state cells were transformed, as you stated 9 earlier. 10 MS. CURRY: 11 Object to the form. 12 MS. THOMPSON: 13 Q Did the reviewers have -- raise any 14 concerns about serious flaws in methodology? 15 A You know, the significance of SNP 16 alteration should be further clarified. That's a 17 pleasant way of saying I don't understand what 18 you're doing. 19 Q I'm asking did the peer-reviewers raise 20 concerns about serious flaws in methodology? 21 MS. CURRY: 22 Object to the form. 23 A In those terms? 24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 352</p> <p>1 MS. CURRY: 2 Object to the form. 3 A Correct. 4 MS. THOMPSON: 5 Q And wouldn't that be the flaws in the 6 analysis that you're referring to? 7 A I don't know what that refers to in 8 vis-à-vis my statement. 9 Q Did the reviewers state that any of the 10 cell line findings appeared to be inaccurate? 11 A No. 12 Q Did the reviewers state that the wrong 13 cell lines were used? 14 A No. 15 Q Did the reviewers state that the doses 16 were inappropriate? 17 A No. 18 Q Did the reviewers state that the CA-125 19 findings were irrelevant? 20 MS. CURRY: 21 Object to the form. 22 A Increase in CA-125 while intriguing are 23 not sufficiently convincing to make it relevant 24 or not.</p>
<p style="text-align: right;">Page 351</p> <p>1 Q Yes, in those terms. 2 A No. 3 Q Did the peer-reviewers raise concerns 4 about serious flaws in the experiments? 5 A In those terms? 6 Q Right. 7 A No. 8 Q Did the peer-reviewers raise serious 9 concerns about flaws in the analysis? 10 A No. 11 Q And, in fact, peer-reviewer number 1 12 explicitly stated that "The conclusions are 13 supported by the results." 14 Right? 15 MS. CURRY: 16 Object to the form. 17 A They rejected the paper. 18 MS. THOMPSON: 19 Q I -- that wasn't my question. 20 The question was -- I mean, my question 21 was that the reviewer number 1 specifically 22 states "The conclusions are supported by the 23 results." 24 Correct?</p>	<p style="text-align: right;">Page 353</p> <p>1 MS. THOMPSON: 2 Q But the reviewer certainly didn't say 3 they're irrelevant? 4 A Didn't use those terms. 5 Q And intriguing would at least mean that 6 the reviewer I thought they were of some 7 interest. Wouldn't you agree? 8 MS. CURRY: 9 Object to the form. 10 A Some interest. Some interest. 11 MS. THOMPSON: 12 Q The reviewer did ask for clarification 13 of the significance of SNPs. Did the reviewer 14 state that the SNP findings were irrelevant? 15 A Not in those terms. 16 Q Did the reviewer state that the 17 methodology used to test for the SNPs was flawed? 18 A You know, again, they're seeking 19 clarification. That suggests to me that they 20 have a problem with the way it was done. 21 Wouldn't they -- 22 Q Did -- did the reviewer state the 23 methodology used to test the SNPs was flawed? 24 MS. CURRY:</p>

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<p>1 Sorry. You keep cutting off his answer</p> <p>2 when he's not finished.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Were you finished?</p> <p>5 A Well, I'm just asking what are they</p> <p>6 trying to clarify?</p> <p>7 Q I'm just asking you did -- was there a</p> <p>8 comment that the methodology for testing the SNPs</p> <p>9 was flawed?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A They do not say that.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay. Did the reviewers state that the</p> <p>15 SNP data was in a accurate?</p> <p>16 A I don't think they know. It has to be</p> <p>17 clarified.</p> <p>18 Q And are you aware that the same SNP</p> <p>19 data was submitted to SGO as an abstract and</p> <p>20 recently presented at the annual meeting?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A The one --</p> <p>24 MS. THOMPSON:</p>	<p>1 Q Did the reviewer --</p> <p>2 A I hope not.</p> <p>3 Q Did either reviewer state that the data</p> <p>4 was poor?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Not in that specific term.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Let's look at the reviewer from</p> <p>10 Reproductive Sciences.</p> <p>11 Are you going to give me yours?</p> <p>12 A I've got this pretty much memorized.</p> <p>13 MS. EVERETT:</p> <p>14 Did we put it back in the folder? Here</p> <p>15 is one.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Okay. And the paper was accepted at</p> <p>18 Reproductive Sciences. Is that your</p> <p>19 understanding, since it was eventually published?</p> <p>20 A Yes.</p> <p>21 Q Did the reviewers at Reproductive</p> <p>22 Sciences make any statements regarding flawed</p> <p>23 methodology, experiments, or analysis?</p> <p>24 MS. CURRY:</p>
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<p>1 Q As opposed to a presentation?</p> <p>2 A The one in Honolulu -- the one in</p> <p>3 Honolulu --</p> <p>4 Q Yes.</p> <p>5 A -- Hawaii? Yeah. Yes.</p> <p>6 Q Did you see that poster?</p> <p>7 A No.</p> <p>8 Q Did you speak with the -- the authors</p> <p>9 of the abstract and the paper?</p> <p>10 A No.</p> <p>11 Q Would that have been of interest to you</p> <p>12 to -- to speak with the researchers?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Yeah. So the poster section conflicted</p> <p>16 with everything else I could do. I didn't see</p> <p>17 any posters. But I think given my role on this,</p> <p>18 I probably would not have gone, under any</p> <p>19 circumstances.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Do you have any knowledge as to whether</p> <p>22 either of these reviewers is a Johnson & Johnson</p> <p>23 consultant or expert?</p> <p>24 A I have no -- no idea.</p>	<p>1 Object to the form.</p> <p>2 A I'm sorry. I only see one reviewer;</p> <p>3 right?</p> <p>4 MS. THOMPSON:</p> <p>5 Q We only have comments from one</p> <p>6 reviewer. That's correct.</p> <p>7 A Yeah. And -- and they don't make that</p> <p>8 comment.</p> <p>9 Q So I want to just go through Dr. Saed's</p> <p>10 published paper --</p> <p>11 A Uh-huh.</p> <p>12 Q -- and discuss what was done in this --</p> <p>13 just from the materials and methods. We're not</p> <p>14 in results yet. Okay?</p> <p>15 So Dr. Saed used the following cell</p> <p>16 lines: SKOV3, A2780, TOV11 -- or 112D. And</p> <p>17 those are all ovarian cancer cell lines; correct?</p> <p>18 A There is significant question about the</p> <p>19 origin of 2780.</p> <p>20 Q Okay.</p> <p>21 A It may --</p> <p>22 Q But it is a cancerous cell line?</p> <p>23 A I would accept that. Yeah.</p> <p>24 Q Okay. And, then, there are also three</p>

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<p style="text-align: right;">Page 358</p> <p>1 noncancerous cell lines. Agree? The human 2 primary normal ovarian epithelial cells from Cell 3 Biologics Chicago, the human ovarian epithelial 4 cells from Cell Biologics, and the human -- oops. 5 A Immortal one. 6 Q And the immortalized human fallopian 7 tube secretory epithelial cells, FT33, from 8 applied biologic materials. 9 Would you agree those are three 10 noncancerous cell lines? 11 A And when you're defining 12 "noncancerous," you mean they were not isolated 13 from a tumor? 14 Q Correct. 15 A Agree on that. 16 Q Again, just going through the 17 methodology, were the cells grown in media and 18 conditions following manufacturer protocol? 19 MS. CURRY: 20 Object to the form. 21 A I'm not really sure what the 22 manufacturer suggested. But I don't -- I think 23 that the way they were cultured appeared okay to 24 me.</p>	<p style="text-align: right;">Page 360</p> <p>1 MS. CURRY: 2 Object to the form. 3 A I believe so. 4 MS. THOMPSON: 5 Q And using the realtime PCR -- RT-PCR, 6 the -- the following assays were performed. Beta 7 actin for normalization of samples; right? 8 A Yes. 9 Q CAT, SOD3? 10 A Uh-huh. 11 Q GSR, GPX1, NOS2. Are those the tests 12 that were performed with PCR? 13 A Seven -- seven genes. 14 Q Yes. 15 A Including beta actin. 16 Q And -- 17 A Yes. 18 Q And by ELISA, Dr. Saed in his lab 19 tested CAT, SOD, GSR, GPX, NPO, and the CA-125 20 that we've talked about before; correct? 21 A Yes. 22 Q And Dr. Saed -- and those have all been 23 peer-reviewed and published in other studies 24 using ELISA and testing those --</p>
<p style="text-align: right;">Page 359</p> <p>1 MS. THOMPSON: 2 Q Appeared what? 3 A Okay to me. 4 Q Okay. And you'll agree that the cells 5 were seeded and treated with zero, 5, 20, or 100 6 micrograms per mil of baby powder; correct? 7 A This is in Treatment of Cells? 8 Q Yes. 9 A Correct. 10 Q And the -- so the talcum powder was 11 dissolved in DMSO; correct? 12 A I am looking for that. Do you see 13 that? 14 Q It's in Treatment of Cells also. 15 A Oh, okay. 16 Q I went out of order. 17 A Thank you. 18 Q And are you aware that these doses have 19 previously been reported in peer-reviewed 20 literature -- 21 MS. CURRY: 22 Object to -- 23 MS. THOMPSON: 24 Q -- for the study of talc?</p>	<p style="text-align: right;">Page 361</p> <p>1 MS. CURRY: 2 Object to the form. 3 A Yes. 4 MS. THOMPSON: 5 Q -- particular markers? 6 And Dr. Saed performed the TaqMan SNP 7 genotyping assay on all cell lines; correct? 8 A It's listed there. Yes. 9 Q And those were performed by the Applied 10 Genomics Technology Center At Wayne State 11 University; correct? 12 A Yes. 13 Q And is it your understanding that this 14 is a core facility? 15 MS. CURRY: 16 Object to the form. 17 A That, I don't know. But it could be. 18 MS. THOMPSON: 19 Q What is a core facility? 20 A It's generally a facility that provides 21 standard assays, and everybody shares, and they 22 charge a fee. 23 Q Is there some accreditation of core 24 facilities for quality control?</p>

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<p>1 A Usually it's institutional. In other 2 words, it's not an external group. But a 3 institution won't fund the core unless it's doing 4 decent work. 5 Q And Dr. Saed and his researchers then 6 performed the cell proliferation and apoptosis 7 studies using the TACS MTT self-proliferation 8 assay; correct? 9 A Yes. 10 Q And -- and cast pace 3 after treatment 11 of all the cell lines with the various doses; 12 correct? 13 A Yes. 14 Q And you'll agree that all of these 15 tests have been performed, peer-reviewed, and 16 published previously by Dr. Saed and others; 17 correct? 18 MS. CURRY: 19 Object to the form. 20 A I don't know that. But these are 21 reasonably standard. 22 MS. THOMPSON: 23 Q These are standardized -- 24 A Yeah.</p>	<p>1 A They're generally accepted. I -- 2 "standardized" is a difficult word because it 3 implies some sort of external review or 4 standardization. And that's not true. These are 5 kits that are -- are bought and then they're 6 implemented in the lab. You still don't know 7 whether it's really being done right, but -- 8 MS. THOMPSON: 9 Q Okay. Well it sounds like -- 10 A -- but -- but -- but they're -- we're 11 familiar with these -- 12 Q Okay. 13 A -- and there's nothing too much out of 14 the box there. 15 Q And before, you said these are 16 standardized, yeah, so I was just going back to 17 that. 18 A Right. 19 Q I think we got the answer. 20 I'm about to start a little bit 21 different area. 22 MS. THOMPSON: 23 Do we want to take a break now or do 24 you want to go for another 30 minutes or so?</p>
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<p>1 Q -- testing methods. 2 All right. Let -- let me just ask that 3 question again because we've got a -- these are 4 standardized testing methods; correct? 5 MS. CURRY: 6 Object to the form. 7 A I don't know what you mean by 8 "standardized." These are assays that many labs 9 use. They're not being done in -- they're not 10 being done in a central CLIA-approved lab. 11 They're just being done by him and maybe a core 12 lab. 13 MS. THOMPSON: 14 Q And I was just asking the question 15 because previously it got chopped into two pieces 16 on these are standardized -- yeah, testing 17 methods, all right. So I was just trying to get 18 a single answer -- 19 A Yes. 20 Q -- was the purpose of that question. 21 So these are standardized testing 22 methods; correct? 23 MS. CURRY: 24 Object to the form.</p>	<p>1 MS. CURRY: 2 How much time do we have left on the 3 record? 4 VIDEOGRAPHER: 5 An hour and seven minutes. 6 MS. CURRY: 7 Do you want to take a final break now? 8 MS. THOMPSON: 9 Yeah. I'll easily finish the rest, I 10 think, in an hour and seven minutes. 11 MS. CURRY: 12 Okay. 13 MS. THOMPSON: 14 Maybe even less. 15 VIDEOGRAPHER: 16 Off the record at 4:39 p.m. 17 (OFF THE RECORD.) 18 VIDEOGRAPHER: 19 We're back on the record at 4:50 p.m. 20 MS. THOMPSON: 21 Q Dr. Birrer, I'd like to do another 22 chart with Dr. Saed's research so I can 23 understand what your opinions are regarding his 24 findings. Okay?</p>

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<p>1 A Okay.</p> <p>2 MS. CURRY:</p> <p>3 And for the record, I object to the</p> <p>4 creation of this chart.</p> <p>5 (DEPOSITION EXHIBIT NUMBER 31 WAS</p> <p>6 MARKED FOR IDENTIFICATION.)</p> <p>7 MS. CURRY:</p> <p>8 What's the exhibit number?</p> <p>9 MS. THOMPSON:</p> <p>10 And this would be Exhibit 31.</p> <p>11 Q And these are the tables taken from</p> <p>12 Dr. Saed's manuscript. Does that look right?</p> <p>13 If you want to compare, you can.</p> <p>14 A Let me just compare.</p> <p>15 MS. CURRY:</p> <p>16 This the from the published manuscript?</p> <p>17 MS. THOMPSON:</p> <p>18 Q This is from the published manuscript?</p> <p>19 A This is from Figure 1, right?</p> <p>20 Q And -- and you'll agree that these</p> <p>21 charts are generated from the raw data; correct?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A It appears so.</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A I assume they are. I mean, in terms of</p> <p>4 they reflect the actual raw data, yeah.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Right. So I'm going to put a Y --</p> <p>7 A Okay.</p> <p>8 Q -- for accurate.</p> <p>9 A Oh. You're looking at all of them?</p> <p>10 Q Oh. Do you have any --</p> <p>11 MS. CURRY:</p> <p>12 Do you have the published paper?</p> <p>13 THE WITNESS:</p> <p>14 I have it here. Right here.</p> <p>15 MS. CURRY:</p> <p>16 What exhibit is that?</p> <p>17 THE WITNESS:</p> <p>18 Yeah. Well, I'll have to say, that</p> <p>19 does look different.</p> <p>20 MS. THOMPSON:</p> <p>21 Q I can -- I'll represent that they were</p> <p>22 cut and pasted from the manuscript. So if they</p> <p>23 are different, it's a --</p> <p>24 MS. CURRY:</p>
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<p>1 MS. THOMPSON:</p> <p>2 Q And --</p> <p>3 A Although I would say --</p> <p>4 MS. GARBER:</p> <p>5 Do you have two? Because your</p> <p>6 co-counsel --</p> <p>7 MS. THOMPSON:</p> <p>8 No. That's just one copy, one exhibit.</p> <p>9 A These are -- for instance, the PCR is</p> <p>10 normalized.</p> <p>11 MS. THOMPSON:</p> <p>12 Q Okay. And this chart shows PCR and</p> <p>13 ELISA for antioxidants; right?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 MS. THOMPSON:</p> <p>17 Q The expression of antioxidants and the</p> <p>18 activity of antioxidants CAT and SOV3; correct?</p> <p>19 A Correct.</p> <p>20 Q I want to go through this chart and</p> <p>21 have you tell me "yes" or "no" for each of these</p> <p>22 with each cell line.</p> <p>23 Do you have an opinion as to whether</p> <p>24 these results are accurate?</p>	<p>1 Okay. I'm sorry. I'm having a hard</p> <p>2 time following --</p> <p>3 A But this --</p> <p>4 MS. CURRY:</p> <p>5 -- this because the data represented on</p> <p>6 the exhibit is not reflective of the bar graphs</p> <p>7 that are in the published manuscript.</p> <p>8 So if you can just point us to where in</p> <p>9 the published manuscript you're pulling this</p> <p>10 from.</p> <p>11 MS. THOMPSON:</p> <p>12 All right.</p> <p>13 A This is -- the entire ordinate has</p> <p>14 changed. This is 25. This is 100.</p> <p>15 MS. THOMPSON:</p> <p>16 Q This is -- this is, from the chart,</p> <p>17 this is Figure 1. The color came out a little</p> <p>18 bit differently in the printing process,</p> <p>19 but the --</p> <p>20 MS. CURRY:</p> <p>21 This is not Figure 1.</p> <p>22 A No. Not even close. This is, in fact,</p> <p>23 Figure 3.</p> <p>24 MS. THOMPSON:</p>

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<p>1 Q PCR, CAT, SOD3. CAT activity and SOD 2 activity. 3 MS. THOMPSON: 4 Are y'all looking? Mine are identical. 5 Can you be -- 6 MS. CURRY: 7 On the published manuscript, this chart 8 does not represent -- 9 MS. THOMPSON: 10 To Figure 1? 11 MS. CURRY: 12 -- to Figure 1. 13 MS. THOMPSON: 14 Let's go off the record. 15 VIDEOGRAPHER: 16 Going off the record at 4:55. 17 (OFF THE RECORD.) 18 VIDEOGRAPHER: 19 We're back on the record at 4:59 p.m. 20 MS. THOMPSON: 21 Q Okay. Now that we've got that 22 straightened out, so you'll agree that this is 23 the -- the chart that shows the expression of 24 antioxidant CAT and SKOV3 and the activity of the</p>	<p>1 MS. CURRY: 2 Object to the form. 3 A It could change them considerably, 4 yeah. 5 MS. THOMPSON: 6 Q Do you want to change that to a 7 question mark, or do you want to change that to 8 no, they're not accurate? 9 MS. CURRY: 10 Object to the form. 11 A Question mark will be fine. 12 MS. THOMPSON: 13 Q And that would go for all cell lines? 14 A Well, the technology -- the techniques 15 used was applied to all of them. 16 MS. CURRY: 17 Just so I know what we're doing here -- 18 I'm sorry -- is when you're saying results 19 accurate in these four pictures, are -- are you 20 talking about -- like is that based on raw data 21 that's supposed to be in here? I'm just not sure 22 what we're doing. 23 MS. THOMPSON: 24 These graphs are from the raw data.</p>
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<p>1 same; correct? 2 A You're on Figure 1? 3 Q I am on Figure 1, yes. 4 A Yeah. That's CAT and SKOV3? 5 Q Yeah. 6 A Yep. 7 Q And we -- we are going through each 8 cell line. The first column was Results 9 Accurate, and I think -- 10 A So let me -- let me revise that. 11 Q Okay. 12 A Because now I understand what we're 13 looking at. 14 So I think there's a serious problem in 15 the PCR, or at least I'd be concerned by that. 16 These PCR MRNA levels were normalized to beta 17 actin. And I think most of us would accept that 18 using one housekeeping gene is not acceptable. I 19 would expect at least two or three to make sure 20 that there isn't a change in the stability of 21 beta actin, which would throw off your 22 quantification levels of those genes. 23 Q And do you think that would render 24 these results inaccurate?</p>	<p>1 MS. CURRY: 2 But the raw data, we don't have. That 3 hasn't -- 4 MS. THOMPSON: 5 You've seen the raw data in the lab 6 notebooks and Dr. Saed has -- is this an 7 objection or is this -- 8 MS. CURRY: 9 It's an object- -- I'm just honestly -- 10 I'm trying -- you're trying to have him create an 11 exhibit -- 12 MS. THOMPSON: 13 That's a speaking objection. 14 MS. CURRY: 15 -- and I'm trying to find out -- 16 MS. THOMPSON: 17 If he understands it, it doesn't really 18 matter whether you do or not, Dawn. I mean -- 19 MS. CURRY: 20 And that's fine if you don't want an 21 accurate record. That's fine. 22 MS. THOMPSON: 23 And he hasn't expressed that he doesn't 24 understand.</p>

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<p>1 MS. CURRY: 2 That's fine. 3 MS. THOMPSON: 4 Q Dr. Birrer, do you understand what I'm 5 asking with this chart? If not, I'll explain it. 6 A Well, I -- I think -- it's a little bit 7 like the exercise this morning, which is we're 8 creating a document without all the information. 9 I don't have the raw data here. I mean, yeah, 10 it's in the notebooks, I suppose, somewhere. 11 Q And -- and you'll agree that these 12 charts are generated from raw data by a software 13 program. Correct? 14 And Dr. Saed testified to that. 15 Correct? 16 MS. CURRY: 17 Object to the form. 18 A Well, again, depending on what data's 19 put in -- 20 MS. THOMPSON: 21 Q Okay. 22 A -- you could get completely different 23 results. 24 Q I understand. But we're gonna look at</p>	<p>1 A Well, I think the -- if you're gonna 2 call them normal, then the normal primary -- the 3 human primary normal ovarian cell lines would be 4 more relevant. 5 MS. THOMPSON: 6 Q More relevant? But either one would be 7 relevant. Is that what you're saying? 8 MS. CURRY: 9 Object to form. 10 A No. I think the immortalized one is 11 not normal, so it wouldn't be relevant. 12 MS. THOMPSON: 13 Q Okay. So we'll make another column. 14 Well, we don't -- the immortalized and 15 the normal. 16 So the immortalized would be not 17 relevant? 18 A Right. 19 Q And the -- 20 A Yes. 21 Q Maybe I should get a clean -- let's -- 22 let's start over this chart. That's okay. I'll 23 make the next one neater. 24 Okay. Let's start again. And we're</p>
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<p>1 the data that was in the peer-reviewed published 2 paper. Okay? 3 Are the results relevant? And we can 4 go by each cell line. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q And yes or no or you don't know. 9 MS. CURRY: 10 Object to the form. 11 A Well, one of the challenges in this 12 paper is the purpose of the EL1 cell line. I 13 don't think those results are relevant. 14 MS. THOMPSON: 15 Q Okay. The other lines? 16 A The normal ovary, I would assume -- is 17 that primary cells? Right? We reviewed that? 18 Let me go back. 19 So I don't know if that's -- I don't 20 know if that's the HOS cell line or the -- the 21 ones from Cell Biologics. 22 Q Is one relevant and one not? 23 MS. CURRY: 24 Object to the form.</p>	<p>1 gonna distinguish between -- 2 A Uh-huh. 3 Q -- the immortalized, which is IM on the 4 chart, and that's going to be not relevant; 5 right? 6 A Correct. 7 Q And the normal cells are relevant, in 8 your mind? 9 A Uh-huh. 10 Q How about the fallopian tube, the FT33? 11 A Yeah. So that's immortalized also, so 12 I don't think it's particularly relevant. 13 Q Is it not relevant? 14 MS. CURRY: 15 Object to the form. 16 A Uh-huh. 17 MS. THOMPSON: 18 Q And that's because it's immortalized? 19 A Uh-huh. 20 Q Okay. And 3, cancer cell lines? 21 A So this is -- 22 MS. CURRY: 23 Object to the form. 24 A So this was a big -- this was a concern</p>

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<p style="text-align: right;">Page 378</p> <p>1 in the paper, which is that, as you know, SKOV3</p> <p>2 is a clear cell; we've got an endometrioid; and</p> <p>3 we don't even know where 2780 comes from, so I</p> <p>4 don't think they're relevant.</p> <p>5 MS. THOMPSON:</p> <p>6 Q And that's because of lacking a clear</p> <p>7 histologic relationship?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A That's right.</p> <p>11 MS. THOMPSON:</p> <p>12 Q Do those results show a biological</p> <p>13 effect from talcum powder?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A So I don't view that -- I don't -- I</p> <p>17 guess the answer is -- biologic effects?</p> <p>18 MS. THOMPSON:</p> <p>19 Q Does something happen when you put the</p> <p>20 baby powder in the cell culture?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 MS. THOMPSON:</p> <p>24 Q This is not related to whether you</p>	<p style="text-align: right;">Page 380</p> <p>1 Q As long as you approve of my work, we</p> <p>2 can -- we can switch the exhibit over to the one</p> <p>3 I'm doing.</p> <p>4 A Uh-huh.</p> <p>5 Q If the results are accurate, do they</p> <p>6 demonstrate a dose-dependent response?</p> <p>7 MS. CURRY:</p> <p>8 I object to the entirety of the</p> <p>9 exercise --</p> <p>10 MS. THOMPSON:</p> <p>11 Okay. You're --</p> <p>12 MS. CURRY:</p> <p>13 -- but I am following you in terms of</p> <p>14 the accuracy of you putting his answers down on</p> <p>15 the paper.</p> <p>16 MS. THOMPSON:</p> <p>17 Okay. All right. And we'll have the</p> <p>18 record, too.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Do the answers show a dose-dependent</p> <p>21 response?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A So it depends on the cell line, I</p>
<p style="text-align: right;">Page 379</p> <p>1 agree with how it was, the dosage, whether the</p> <p>2 results are accurate or not.</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Yeah. It's really hard to interpret</p> <p>6 this because, again, I believe he used a control</p> <p>7 with DMSO. DMSO has fairly dramatic effects and</p> <p>8 he's not controlling for it. So, you know, I</p> <p>9 would say no.</p> <p>10 MS. THOMPSON:</p> <p>11 Q No biologic effects?</p> <p>12 A No biologic effects.</p> <p>13 Q On any of the cell lines?</p> <p>14 A Correct. Unless you call PCR effect --</p> <p>15 you know, PCR quantification biologic.</p> <p>16 Q Do you have your exhibit there?</p> <p>17 A Exhibit --</p> <p>18 Q Oh, well. We can -- we'll just use</p> <p>19 mine.</p> <p>20 A This one?</p> <p>21 Q I wondered if you wanted to be filling</p> <p>22 these in yourself. But as long as you correct</p> <p>23 my --</p> <p>24 A You go.</p>	<p style="text-align: right;">Page 381</p> <p>1 think. Right?</p> <p>2 MS. THOMPSON:</p> <p>3 Q Which cell line does not? So --</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A If you look at the PCR, I don't know --</p> <p>7 and you look at everything but EL1, I don't know</p> <p>8 if those are statistically different. If you --</p> <p>9 if you pull it down, you can see it.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Oh, sorry.</p> <p>12 A Yeah. See way on the top?</p> <p>13 Q If the paper says they were</p> <p>14 statistically significant, does that matter?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Well, it doesn't look like it to me.</p> <p>18 MS. THOMPSON:</p> <p>19 Q So are you gonna say no or you don't</p> <p>20 know?</p> <p>21 A No.</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 MS. THOMPSON:</p>

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<p>1 Q On all cell lines?</p> <p>2 A No. For EL1. Normal ovary.</p> <p>3 So, actually, for -- for -- what is</p> <p>4 that? That's B, SKOV3. So for SKOV3, it looks</p> <p>5 like nothing. It's -- from the mRNA level, it's</p> <p>6 all suppressed. It's all very low. I don't</p> <p>7 see -- I don't see -- if there's a P-value there,</p> <p>8 what is it between? The control and the 5? The</p> <p>9 control and the 20? The 20 and the 100? I don't</p> <p>10 know.</p> <p>11 The ELISA looks like -- this is for</p> <p>12 SKOV3; right? The ELISA looks like there's no</p> <p>13 effect until you get to 20 or 100.</p> <p>14 Q And you're eyeballing the statistical</p> <p>15 significance of these charts?</p> <p>16 A Well, that's why they --</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A That's why they put arrow bars in</p> <p>20 there.</p> <p>21 MS. THOMPSON:</p> <p>22 Q So reading Dr. Saed's results in the</p> <p>23 manuscript --</p> <p>24 A Uh-huh.</p>	<p>1 Q Well, you had the raw data to review,</p> <p>2 didn't you?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q It's on your materials considered list.</p> <p>7 A Well, his notebooks were very difficult</p> <p>8 to interpret.</p> <p>9 Q All the raw data was in his notebooks.</p> <p>10 If it -- if you are saying these results were not</p> <p>11 accurate, could you have looked it up in the lab</p> <p>12 notebooks?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Yeah, I don't know. I'd have to go</p> <p>16 back and look at it. There were --</p> <p>17 MS. THOMPSON:</p> <p>18 Q Did you do that?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I looked at his notebooks. They were</p> <p>22 extremely hard to follow.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Did you ask someone --</p>
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<p>1 Q -- the CAT and SKOV -- this is Figure</p> <p>2 1 -- "mRNA and protein levels were significantly</p> <p>3 in a dose-dependent manner in talc-treated cells</p> <p>4 compared to controls."</p> <p>5 Do you disagree with Dr. Saed's</p> <p>6 analysis?</p> <p>7 A I disagree with that statement.</p> <p>8 Q So you're going to say, regardless of</p> <p>9 Dr. Saed's peer-reviewed conclusion, your</p> <p>10 opinion, these do not show a dose-dependent</p> <p>11 response --</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q -- based on your eyeballing of the</p> <p>16 chart?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form. That's --</p> <p>19 A Well, that -- I disagree with that</p> <p>20 statement. That implies that these are all</p> <p>21 statistically significant, and I can't imagine</p> <p>22 that's true, given the arrow bars. But it would</p> <p>23 be very helpful to have the raw data.</p> <p>24 MS. THOMPSON:</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 MS. THOMPSON:</p> <p>4 Q -- to get information? Because what's</p> <p>5 your evidence that the data wasn't included in</p> <p>6 the lab notebooks?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Well, I -- again, his notebooks were</p> <p>10 very poorly organized. There were things that</p> <p>11 were whited out. So it was hard to follow.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay. What was whited out? Seriously.</p> <p>14 Was there any data whited out?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 MS. THOMPSON:</p> <p>18 Q You're making --</p> <p>19 A Well, do you have them here?</p> <p>20 MS. THOMPSON:</p> <p>21 Q I do.</p> <p>22 MS. CURRY:</p> <p>23 And the deposition transcript?</p> <p>24 MS. THOMPSON:</p>

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<p>1 I need the lab notebooks. Let's just 2 answer this, and I think we're going to move on 3 to something else. 4 Q In your opinion, are the results 5 dose-deponent? 6 MS. CURRY: 7 Object to the form. 8 A So I -- I guess the way to handle that 9 would be for -- there looks like there's a dose 10 dependency for some of the cell lines in certain 11 conditions but not all of them. Is that fair to 12 say? 13 MS. THOMPSON: 14 Q Well, so you don't believe 15 Dr. Saed's -- 16 A Conclusions. 17 Q -- conclusions? 18 A I don't agree with that one statement. 19 His statement is that basically all of the time 20 points demonstrated a dose-dependant effect of 21 talc. If that's true -- you can't see it here. 22 You see it in some. 23 Q Did -- did any of the peer-reviewers 24 raise a question about that statement?</p>	<p>1 publications using the same methodology and the 2 same assays? 3 MS. CURRY: 4 Object to the form. 5 A I didn't -- I didn't go through all of 6 his papers, no. 7 MS. THOMPSON: 8 Q Did you go through any of his previous 9 papers? 10 MS. CURRY: 11 Object to the form. 12 A I can't recall going through papers 13 that used this technology. 14 MS. THOMPSON: 15 Q But this technology has been 16 peer-reviewed and published -- 17 MS. CURRY: 18 Object to the form. 19 A Yes. 20 MS. THOMPSON: 21 Q -- previously? 22 And you're aware that Dr. Saed has 23 presented four abstracts based on this research; 24 correct?</p>
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<p>1 A No. 2 Q And, in fact, the peer-reviewers said 3 his conclusions reflected the results; correct? 4 MS. CURRY: 5 Object to the form. 6 MS. THOMPSON: 7 Q The peer-reviewer that commented on it? 8 A The one reviewer. 9 Q The only one that commented on it? 10 A Yeah. 11 Q So are these question marks or which -- 12 which cell lines do you think are statistically 13 significant? 14 A Yeah. I think that's -- I think that's 15 probably reasonable, question marks. 16 Q Question marks on everything? 17 A Yeah. 18 Q And there's plenty of discussion for us 19 to go back and figure out the reasoning for that. 20 We may come back to the chart, but 21 there's some other things I want to cover, so 22 we'll -- we'll leave that with you disagreeing 23 with Dr. Saed's analysis. 24 Did you look at Dr. Saed's previous</p>	<p>1 A I believe so. 2 Q And abstracts are generally reviewed 3 prior to acceptance at a national meeting; 4 correct? 5 MS. CURRY: 6 Object to the form. 7 A Usually there's a program committee 8 that will review them. 9 MS. THOMPSON: 10 Q And would you agree that, generally, 11 four to six reviewers look at abstracts when 12 making the decision which to accept for a 13 meeting? 14 MS. CURRY: 15 Object to the form. 16 A It depends on the organization. But 17 there usually is -- it's certainly more than one 18 person. 19 MS. THOMPSON: 20 Q If -- if I told you Society For 21 Reproductive Investigation typically has four to 22 six reviewers and SGO has four to five reviewers 23 for each abstract, does that sound reasonable? 24 MS. CURRY:</p>

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1 Object to the form.
2 A You know, I think for the first
3 society, the former one, I'm not familiar with
4 them, but it sounds reasonable.
5 SGO, I've been on the program
6 committee. Sometimes it's a little less than
7 that depending on how many abstracts you get.
8 MS. THOMPSON:
9 Q At least for this year, there were four
10 to five reviewers, and the abstracts were scored
11 numerically.
12 Are you familiar with that system?
13 MS. CURRY:
14 Object to the form.
15 A I am.
16 MS. THOMPSON:
17 Q And the -- and the top scoring
18 abstracts were accepted for presentation?
19 A Usually they'll put a cutoff on it,
20 yeah.
21 Q And in the two criteria that SGO
22 reviewers looked at were, one, scientific
23 validity; and two, clinical relevance.
24 Does that sound right?

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1 You would agree with me that there have
2 been at least 20 to 30 eyes on this research;
3 correct?
4 MS. CURRY:
5 Object to the form.
6 MS. THOMPSON:
7 Q In various levels of review.
8 MS. CURRY:
9 Object to the form.
10 A 20 to 30 sounds a little excessive but
11 probably --
12 MS. THOMPSON:
13 Q Well, four abstracts, four to five
14 reviewers each --
15 A Oh, you're saying all of it?
16 Q Yeah. Combined.
17 MS. CURRY:
18 Objection.
19 MS. THOMPSON:
20 Q Would you agree that there have been at
21 least 25 eyes on this research?
22 A Uh-huh. Some could have overlapped.
23 MS. GARBBER:
24 Or 50 eyes, since there's two.

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1 MS. CURRY:
2 Object to the form.
3 A That, I don't know.
4 MS. THOMPSON:
5 Q And -- and you'll agree that the
6 mutation, the SNP data, was presented as a poster
7 at this year's SGO meeting; correct?
8 MS. CURRY:
9 Object to the form.
10 A I didn't -- I didn't go to that poster,
11 so I don't know what was on it. If it was a --
12 if it was similar to the paper, I would assume
13 so.
14 MS. THOMPSON:
15 Q Okay. So if you have the manuscript
16 that was reviewed by at least two reviewers and
17 the editors of Gynecologic Oncology, you have the
18 manuscript that was reviewed by at least one
19 editor -- one reviewer and editor for
20 Reproductive Sciences. You have abstracts that
21 are each reviewed by four to five reviewers. He
22 also has a book chapter that was reviewed,
23 peer-reviewed by editors which included this
24 data.

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1 MS. THOMPSON:
2 Q Fifty eyes.
3 Are you aware of any other reviewers
4 that raised the serious concerns that you seem to
5 have with Dr. Saed's paper --
6 MS. CURRY:
7 Object to the form.
8 MS. THOMPSON:
9 Q -- and -- and research?
10 A I don't know any of the reviewers for
11 the abstracts or the SGO. That's all kept
12 confidential. So none of them have -- I haven't
13 any firsthand knowledge that they said to me.
14 But the review process hasn't raised -- hasn't
15 necessarily raised the issues that I've raised.
16 Q Okay.
17 A But that doesn't change my opinion.
18 Q I didn't ask you, actually. If it did,
19 I didn't expect it to.
20 I want to go through -- oh.
21 (DEPOSITION EXHIBIT NUMBER 32 WAS
22 MARKED FOR IDENTIFICATION.)
23 MS. THOMPSON:
24 Q And did you -- did you review

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<p style="text-align: right;">Page 394</p> <p>1 Dr. Saed's review article published in 2 Gynecologic Oncology in 2017? 3 A I think I saw this. Is this on 4 oxidative stress? 5 Q Yes. 6 A Yeah. Yeah. 7 Q And -- and do you know if this review 8 article was invited or submitted and 9 peer-reviewed in the process? 10 A I don't know. 11 Q But, as you've testified before, and 12 typically authors of review articles in reputable 13 journals are felt to be experts in the field; 14 correct? 15 MS. CURRY: 16 Object to the form. 17 A They generally are. 18 MS. THOMPSON: 19 Q And -- 20 MS. CURRY: 21 Did you mark this as an exhibit? 22 MS. EVERETT: 23 It's Exhibit 32. 24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 396</p> <p>1 MS. THOMPSON: 2 Q Yes. 3 A It's not the same phrase. Essential 4 role -- actually, the essential role here is 5 pretty narrow. But it -- but, you know, I 6 wouldn't quibble about that. It's in the same 7 range. 8 Q It's a similar concept that's -- that 9 was published in the review article; correct? 10 A Uh-huh. 11 MS. CURRY: 12 Object to the form. 13 MS. THOMPSON: 14 Q Reading the abstract "Clinical and 15 epidemiological investigations have provided 16 evidence supporting the role of reactive oxygen 17 species, ROS, and reactive nitrogen species, RNS, 18 collectively known as oxidative stress in the 19 etiology of cancer." 20 Would you agree with that statement? 21 MS. CURRY: 22 Object to the form. 23 A Yep. 24 MS. THOMPSON:</p>
<p style="text-align: right;">Page 395</p> <p>1 32. 2 MS. CURRY: 3 Okay. Thank you. 4 MS. THOMPSON: 5 Q And just looking at the abstract on -- 6 well, first on the highlights -- this review 7 article updates the role of oxidative stress and 8 the pathogenesis of ovarian cancer. 9 The first highlight is "Oxidative 10 Stress Plays an Essential Role in the 11 Pathogenesis of Ovarian Cancer." 12 A Where are you? I'm sorry. 13 Q The highlights at the top. 14 A Oh. The bullet points? 15 Q Bullet point, highlights. 16 A Okay. 17 Q And you'll agree that -- that statement 18 is essentially the same as the one in the talcum 19 powder article that was asked to be removed 20 because of the data not supporting that 21 statement; correct? 22 MS. CURRY: 23 Object to the form. 24 A You're going on submission?</p>	<p style="text-align: right;">Page 397</p> <p>1 Q "Exogenous factors such as chronic 2 inflammation, infection and hypoxia are major 3 sources of cellular oxidative stress." 4 Would you agree with that statement? 5 MS. CURRY: 6 Object to the form. 7 A Well, I would just refine it to say 8 they were sources. I don't know if they're the 9 major sources. In certain conditions there may 10 be other sources. So it's a little bit of a 11 generality. 12 MS. THOMPSON: 13 Q "Specifically oxidative stress plays an 14 important role in the pathogenesis, 15 neoangiogenesis and dissemination of local or 16 distant ovarian cancer, as it is known to induce 17 phenotypic modifications of tumor cells by 18 crosstalk between tumor cells and the surrounding 19 stroma." 20 Do you agree with that statement? 21 A Well, that's a mouthful. There's a lot 22 in there, and I'm not so sure I know exactly what 23 he's talking about. Pathogenesis is pretty 24 general. Blood vessel formation is a different</p>

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<p>1 process. So --</p> <p>2 Q But certainly the reviewers and the</p> <p>3 editors of the journal, when they published the</p> <p>4 review article --</p> <p>5 A Uh-huh.</p> <p>6 Q -- thought that was accurate</p> <p>7 information; correct?</p> <p>8 A They did.</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Yeah.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Going to Table 1 on page 598, that's a</p> <p>14 "Summary of the Oxidant and Antioxidant</p> <p>15 Expression and Sensitive and Chemoresistant</p> <p>16 Ovarian Cancer." You'll agree that these were</p> <p>17 essentially the same markers that Dr. Saed</p> <p>18 studied in the talcum powder experiments;</p> <p>19 correct?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 MS. THOMPSON:</p> <p>23 Q NPO, INOS?</p> <p>24 A I think so. I think so. I'm just</p>	<p>1 MS. THOMPSON:</p> <p>2 Q But the -- but the markers are the</p> <p>3 same, essentially?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A The markers are the same.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And they're published in this review</p> <p>9 article, correct, in Gynecologic Oncology?</p> <p>10 A They're reported here and published.</p> <p>11 Q And you'll agree there have been some</p> <p>12 other molecular studies relating to talcum powder</p> <p>13 and cell culture; correct?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I believe so.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Are you familiar with a Shukla paper?</p> <p>19 A Yes, I am.</p> <p>20 Q I'll mark the Shukla paper Exhibit 33.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 33 WAS</p> <p>22 MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay. And this paper was published in</p>
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<p>1 checking all of them. Did they --</p> <p>2 Q And generally speaking.</p> <p>3 A Certainly the lower list is all in</p> <p>4 there, yeah.</p> <p>5 Q So -- so these -- these oxidants,</p> <p>6 antioxidants that Dr. Saed studied with the</p> <p>7 talcum powder, he had published before; correct?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Well, this is a review article. He's</p> <p>11 not publishing primary data right now. He's just</p> <p>12 noting it.</p> <p>13 MS. THOMPSON:</p> <p>14 Q A review article noting the relevance</p> <p>15 of those assays for oxidative stress in ovarian</p> <p>16 cancer; correct?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Well, again, I'm refining that a little</p> <p>20 bit because this table really looks for</p> <p>21 expression comparing standard ovarian cancer to</p> <p>22 chemoresistance. That's really not what this</p> <p>23 paper is about. So it's kind of apples and</p> <p>24 oranges.</p>	<p>1 2008; correct?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Sorry. Received in --</p> <p>6 A That was in '9.</p> <p>7 Q In formal form, 2008.</p> <p>8 MS. CURRY:</p> <p>9 Do you have a copy?</p> <p>10 A This is in 2009, I have it.</p> <p>11 MS. THOMPSON:</p> <p>12 Q The title is "Alterations in Gene</p> <p>13 Expression in Human Mesothelia Cells Correlate</p> <p>14 with Mineral Pathogenicity."</p> <p>15 Is that the title of this paper that</p> <p>16 you have?</p> <p>17 A Yes. Yes.</p> <p>18 Q Okay. And it was published in --</p> <p>19 A I have it 2009.</p> <p>20 Q Oh. No. We're looking at -- I'm</p> <p>21 looking at that received in final form, and</p> <p>22 you're -- when it actually appeared. You're</p> <p>23 correct. 2009.</p> <p>24 And this paper looked at cell culture</p>

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<p style="text-align: right;">Page 402</p> <p>1 with asbestos applied; correct?</p> <p>2 A This looked at asbestos, nonfibrous</p> <p>3 talc, and titanium dioxide.</p> <p>4 Q Correct.</p> <p>5 A Or glass beads.</p> <p>6 Q And if you'll turn to Table 2, it</p> <p>7 reports on gene expression and mesothelial cells</p> <p>8 at low and high doses at 8 and 24 hours for the</p> <p>9 low dose and 8 hours for the high dose. Correct?</p> <p>10 A This is genes that are affected by</p> <p>11 asbestos.</p> <p>12 Q Correct.</p> <p>13 And, then, if you'll look at table --</p> <p>14 A And this -- sorry.</p> <p>15 Q -- Table 3, which are the genes</p> <p>16 upregulated by nonfibrous talc, you'll see that</p> <p>17 testing was done at 8 hours at low and high dose.</p> <p>18 And it appears that there was no testing done at</p> <p>19 24 hours for talc.</p> <p>20 Is that your understanding?</p> <p>21 A I believe so.</p> <p>22 Q And, yet, there --</p> <p>23 A I'm sorry. Can I refine that?</p> <p>24 MS. CURRY:</p>	<p style="text-align: right;">Page 404</p> <p>1 Q Yeah, ATF.</p> <p>2 And those are cancer genes; correct?</p> <p>3 Or genes affiliated -- associated with cancer?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A Well, a lot of genes are.</p> <p>7 ATF3 --</p> <p>8 MS. THOMPSON:</p> <p>9 Q ATF3 and interleukin 8 are often</p> <p>10 studied in relationship to cancer association;</p> <p>11 correct?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I'd say interleukin 8. I don't -- I</p> <p>15 know of less data for ATF3. It's a transcription</p> <p>16 factor, so I don't know the story there.</p> <p>17 But your original question, these are</p> <p>18 statistically significant increases at 8 hours</p> <p>19 for talc; right?</p> <p>20 MS. THOMPSON:</p> <p>21 Q And 24 hours for talc was not</p> <p>22 performed; correct?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>
<p style="text-align: right;">Page 403</p> <p>1 Object to the form. Sorry.</p> <p>2 A They were -- it was checked but the</p> <p>3 changes were not observed.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Where do you see that?</p> <p>6 A Well, that may be -- hang on. "These</p> <p>7 are mesothelial cells..." Yeah. Right --</p> <p>8 assuming I'm reading this right.</p> <p>9 Right below the table it says "...were</p> <p>10 initially -- were observed initially with talc at</p> <p>11 8 hours. However, these changes were not</p> <p>12 observed at 24 hours. Suggesting that the human</p> <p>13 mesothelial cells adapt to this mineral."</p> <p>14 Q If you'll look at Table -- at Figure</p> <p>15 4 --</p> <p>16 A Figure 4.</p> <p>17 Q -- you do see that there are</p> <p>18 significant increases in both nonfibrous talc and</p> <p>19 the crocidolite asbestos; correct?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A So this is quantitative PCR of two</p> <p>23 genes; right? This is ATF3?</p> <p>24 MS. THOMPSON:</p>	<p style="text-align: right;">Page 405</p> <p>1 A It was performed but they didn't see</p> <p>2 any changes.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Was it performed at the high dose?</p> <p>5 A Well, let's see. I can't answer that.</p> <p>6 It may be buried in here somewhere. I do -- I do</p> <p>7 note that in this paper they didn't detect a lot</p> <p>8 of gene changes with talc.</p> <p>9 Q They did detect gene changes with talc,</p> <p>10 did they not?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Well, they didn't detect a lot. There</p> <p>14 were some.</p> <p>15 MS. THOMPSON:</p> <p>16 Q I didn't ask if there were a lot.</p> <p>17 There were gene changes with talc?</p> <p>18 A Uh-huh.</p> <p>19 Q Would you consider that a biological</p> <p>20 effect?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A So, I -- yeah. I don't consider it</p> <p>24 biologic. It may be transcriptional.</p>

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<p style="text-align: right;">Page 406</p> <p>1 MS. THOMPSON: 2 Q And you've looked at the Buz'Zard 3 paper; correct? The Pycnogenol paper, does that 4 sound familiar? 5 A Well, I don't recognize that name. 6 Yeah. I did look at it. 7 Q Okay. I'm gonna mark that as Exhibit 8 34. 9 (DEPOSITION EXHIBIT NUMBER 34 WAS 10 MARKED FOR IDENTIFICATION.) 11 MS. THOMPSON: 12 Q And you'll agree that this paper looked 13 at neoplastic transformation in humans' ovarian 14 cell cultures exposed to talc; correct? 15 A Well, this gets back to what we 16 discussed before. I think they -- they -- the 17 title says it and they -- and they argue that 18 what they've shown is transformation. I don't -- 19 I don't agree with that. 20 Q Well, at least the authors say that, in 21 reading from the abstract, two-thirds of the way 22 down, "Talc increased proliferation, induced 23 neoplastic transformation and increased ROS 24 generation timed dependently in the ovarian cells</p>	<p style="text-align: right;">Page 408</p> <p>1 think about Buz'Zard. I'd have to cross-compare 2 that. 3 MS. THOMPSON: 4 Q Well, I'm just asking you if it refutes 5 his findings. 6 MS. CURRY: 7 Object to the form. 8 A No. I -- I'm thinking about that. I 9 think his ROS generation is a little bit 10 different, Buz'Zard. 11 MS. THOMPSON: 12 Q The ROS generation may be a little bit 13 different, but it does show ROS generation in 14 that paper; correct? 15 MS. CURRY: 16 Object to the form. 17 A Now, the Buz'Zard was -- was, for lack 18 of a better term, bizarre, because there were 19 differential effects in terms of production of 20 ROS depending on the concentration. So I found 21 it very difficult. And the interpretation that 22 they had was, I thought, misleading. 23 MS. THOMPSON: 24 Q But the question was: Did it in any</p>
<p style="text-align: right;">Page 407</p> <p>1 and dosed dependently in the p.m." 2 And that's at least what the authors 3 conclude; right? 4 A That's what they say in the abstract, 5 yes. 6 Q And also conclude that "The data 7 suggests that talc may contribute to ovarian 8 neoplastic transformation" -- 9 A Where are you now? I'm sorry. The 10 next sentence? 11 Q Next-to-last sentence. 12 A Yep. 13 Q "The data suggests that talc may 14 contribute to ovarian neoplastic transformation 15 and Pyc reduced the talc-induced transformation." 16 That's what the authors concluded; 17 correct? 18 A That's what they say. 19 Q Do either the Shukla paper or the 20 Buz'Zard paper refute Dr. Saed's research 21 findings? 22 MS. CURRY: 23 Object to the form. 24 A I don't think Shukla does. I'd have to</p>	<p style="text-align: right;">Page 409</p> <p>1 way refute Dr. Saed's findings? 2 MS. CURRY: 3 Object to the form. 4 A In -- in terms of comparing this to 5 that? 6 MS. THOMPSON: 7 Q Yes. 8 A I'd have to take a close look at that. 9 It's not something I thought about. 10 Q Okay. But there's nothing that's 11 obvious that refutes Dr. Saed's -- 12 A It's not leaping out to me. 13 (DEPOSITION EXHIBIT NUMBER 35 WAS 14 MARKED FOR IDENTIFICATION.) 15 MS. THOMPSON: 16 Q Okay. I'm marking as Exhibit 35 a 17 paper by Akhtar from 2010. 18 Have you seen this paper? 19 A This one, I don't think I reviewed. 20 Let me just see if it's on my list. No. 21 Q And are you aware from Dr. Saed's 22 deposition that he referred to the -- this paper 23 to establish his dosages for the talc experiments 24 that Dr. Saed performed?</p>

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<p>1 A In terms of what he did?</p> <p>2 Q Yes.</p> <p>3 A No, I didn't. I'm not aware of that</p> <p>4 from his deposition.</p> <p>5 Q Looking at the paper --</p> <p>6 A Yeah.</p> <p>7 Q -- does that look reasonable?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A This is way out of my purview with iron</p> <p>11 mediated lipid peroxidase in A459 cells, which</p> <p>12 are lung cancer. I don't know the relevance of</p> <p>13 this to what we're addressing here.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Well, let's read what he says --</p> <p>16 A Sure.</p> <p>17 Q -- in the abstract.</p> <p>18 "Talc particles, the basic ingredient</p> <p>19 in different kinds of talc-based cosmetic and</p> <p>20 pharmaceutical products pose a health risk to</p> <p>21 pulmonary and ovarian systems due to domestic and</p> <p>22 occupational exposures."</p> <p>23 Is that what the authors say?</p> <p>24 A Correct.</p>	<p>1 MS. THOMPSON:</p> <p>2 Q Well, it's the first statement of the</p> <p>3 abstract.</p> <p>4 A Right.</p> <p>5 Q Do you think that's just an irrelevant</p> <p>6 statement, that they put as the first -- the</p> <p>7 introductory sentence to their paper?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Well, I think that's their supposition.</p> <p>11 They make that statement. I get it. But that</p> <p>12 doesn't mean that this experiment is relevant to</p> <p>13 that.</p> <p>14 MS. THOMPSON:</p> <p>15 Q I'm asking do the authors think it was</p> <p>16 relevant?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A You'd have to address it with them. I</p> <p>20 don't know.</p> <p>21 MS. THOMPSON:</p> <p>22 Q "The talc particles, the basic</p> <p>23 ingredient in different kinds of talc-based</p> <p>24 cosmetic and pharmaceutical products pose a</p>
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<p>1 Q So at least the authors thought that</p> <p>2 this experiment had relevance to talc-based</p> <p>3 cosmetic products; correct?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A Yeah. I think it's in that sentence.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And at least the authors thought that</p> <p>9 these experiments had relevance to the ovarian</p> <p>10 system; correct?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Well, they mentioned it. And as a -- I</p> <p>14 think as a premise to the experiment. That</p> <p>15 doesn't mean it's relevant.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Well, it's a -- you would assume that</p> <p>18 if it's a premise to do the experiment, that they</p> <p>19 thought the experiments would be relevant to the</p> <p>20 question that they're asking; correct?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A There's no question there. That's a</p> <p>24 statement. It's in the --</p>	<p>1 health risk to pulmonary and ovarian systems due</p> <p>2 to domestic and occupational exposure."</p> <p>3 And then they go on to why they're</p> <p>4 studying talc particles.</p> <p>5 Is -- is it your testimony that you</p> <p>6 don't know whether the authors thought that was</p> <p>7 relevant or not?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Well, it's speculation. I don't know</p> <p>11 what was in their mind. I can read this. I see</p> <p>12 what they did. And that opening statement is,</p> <p>13 again, sort of setting the -- setting the plate.</p> <p>14 But is this system relevant to that? I don't</p> <p>15 know. Lipid peroxidation --</p> <p>16 MS. THOMPSON:</p> <p>17 Q But -- but you would agree that the</p> <p>18 peer-reviewers and the editors of this journal</p> <p>19 accepted this paper with the introduction that</p> <p>20 talc particles posed a risk to pulmonary and</p> <p>21 ovarian systems and that the investigators at</p> <p>22 least did the experiments and published the</p> <p>23 paper; correct?</p> <p>24 MS. CURRY:</p>

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<p style="text-align: right;">Page 414</p> <p>1 Object to the form.</p> <p>2 A Did the work and published the paper.</p> <p>3 Agree.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And in the conclusion, the authors</p> <p>6 state "We have presented a preliminary data on</p> <p>7 the toxicity response elicited by the two types</p> <p>8 of talc nano particles depending on their</p> <p>9 different geologic origin," and then go on to</p> <p>10 conclude, the end, "Data clearly suggests that</p> <p>11 exposure to talc, particularly nanopowder, should</p> <p>12 be protected in humans at risk of occupational as</p> <p>13 well as domestic exposure."</p> <p>14 That's the conclusions of the authors</p> <p>15 based on this research; correct?</p> <p>16 A That's the last sentence? Is that the</p> <p>17 last sentence?</p> <p>18 Q Yes.</p> <p>19 A Yeah. That's what they say.</p> <p>20 Q That is in the conclusion?</p> <p>21 A That's what they say.</p> <p>22 Q And that is the "Conclusion" section of</p> <p>23 the paper; correct?</p> <p>24 A Correct.</p>	<p style="text-align: right;">Page 416</p> <p>1 Object to the form.</p> <p>2 A Well, I just saw it. I haven't</p> <p>3 reviewed it. I would be concerned that they're</p> <p>4 in a completely different cell system. And, as</p> <p>5 you know, there's just huge differences in tissue</p> <p>6 responses.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Would that automatically make it</p> <p>9 irrelevant, in your mind?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A I would -- I'd like to read the paper.</p> <p>13 But I'd be concerned. I would start out with a</p> <p>14 certain concern about that and then go through</p> <p>15 the paper.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Okay. We can go off the record, and</p> <p>18 you -- you can look at the paper.</p> <p>19 A Okay.</p> <p>20 VIDEOGRAPHER:</p> <p>21 Off the record at 5:38 p.m.</p> <p>22 (OFF THE RECORD.)</p> <p>23 VIDEOGRAPHER:</p> <p>24 We're back on the record at 5:40 p.m.</p>
<p style="text-align: right;">Page 415</p> <p>1 (DEPOSITION EXHIBIT NUMBER 36 WAS</p> <p>2 MARKED FOR IDENTIFICATION.)</p> <p>3 MS. THOMPSON:</p> <p>4 Q I'm marking as Exhibit 36 another paper</p> <p>5 by Akhtar and colleagues published in 2012.</p> <p>6 Have you seen that paper, Dr. Birrer?</p> <p>7 A No.</p> <p>8 Q This paper is titled "Cytotoxicity and</p> <p>9 Apoptosis" --</p> <p>10 MS. CURRY:</p> <p>11 Do you have a copy? Sorry.</p> <p>12 MS. THOMPSON:</p> <p>13 I'm sorry.</p> <p>14 MS. CURRY:</p> <p>15 Thank you.</p> <p>16 MS. THOMPSON:</p> <p>17 Q This paper is titled "Cytotoxicity and</p> <p>18 Apoptosis Induction by Nano-Scale Talc Particles</p> <p>19 From Two Different Geographical Regions in Human</p> <p>20 Lung Epithelial Cells."</p> <p>21 Is it your opinion that this paper is</p> <p>22 irrelevant because it tested the biological</p> <p>23 effects of talc in human lung epithelial cells?</p> <p>24 MS. CURRY:</p>	<p style="text-align: right;">Page 417</p> <p>1 MS. THOMPSON:</p> <p>2 Q Dr. Birrer, this article titled</p> <p>3 "Cytotoxicity and Apoptosis Induction by</p> <p>4 Nano-Scale Talc Particles from Two Different</p> <p>5 Geographical Regions in Human Lung Epithelial</p> <p>6 Cells" is by the same authors of the paper we</p> <p>7 just discussed; right?</p> <p>8 A Correct. I don't know if they're all</p> <p>9 on here, but it's the same group.</p> <p>10 Q Same group.</p> <p>11 A Yeah.</p> <p>12 Q Going to the last sentence on the first</p> <p>13 page in the introduction, the authors state:</p> <p>14 "Epidemiologic evidence also suggest a possible</p> <p>15 association between genital use of talcum powder</p> <p>16 and risk of ovarian cancer. Talc also appears to</p> <p>17 induce reactive oxygen, ROS, generation,</p> <p>18 oxidative stress, and inflammation."</p> <p>19 Is that what the authors state</p> <p>20 regarding the epidemiology of talcum powder and a</p> <p>21 reason for studying the cellular response?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A So the first statement is about</p>

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<p style="text-align: right;">Page 418</p> <p>1 epidemiologic evidence. The second statement is 2 about reactive oxygen species. And they don't 3 say anything about why there's a reason to study. 4 They just make those statements. 5 MS. THOMPSON: 6 Q Is it your testimony that they would 7 just put -- put that statement in randomly in the 8 introduction to their paper about cytotoxicity and 9 apoptosis with talc particles? 10 MS. CURRY: 11 Object to the form. 12 A It wouldn't be random. But, again, I 13 think it's just a piece of information that this 14 has been studied before in a different system. 15 MS. THOMPSON: 16 Q And you would -- and they cite to 17 Buz'Zard, the paper we just reviewed; correct? 18 A Uh-huh. Yes. 19 Q And they start -- cite to Langseth; 20 correct? 21 A Yes. 22 Q And in previous testimony you have 23 testified that you think that Langseth is a -- is 24 a high-quality paper. Do you remember that?</p>	<p style="text-align: right;">Page 420</p> <p>1 Is that what the authors conclude from 2 the experiments that they did on nano talc 3 particles? 4 A That's what they say right there, yeah. 5 Q And we've established earlier that the 6 baby powder is a mixed particle-sized product; 7 correct? 8 MS. CURRY: 9 Object to the form. 10 A Well, we talked about talc particles, 11 and I simply said my understanding is not as a 12 mineralogist, but my understanding is a different 13 spectrum. I don't -- 14 MS. THOMPSON: 15 Q And do you know one way or the other 16 whether some of the particles in baby powder 17 could be classified as nano particles? 18 A No, I don't know that. 19 Q Do either of the Akhtar papers that we 20 just looked at refute Dr. Saed's research? 21 MS. CURRY: 22 Object to the form. 23 A The only comment I would make on that 24 is that this -- and again, I looked at this for</p>
<p style="text-align: right;">Page 419</p> <p>1 MS. CURRY: 2 Object to the form. 3 A Yeah. I'd have to see that. 4 MS. THOMPSON: 5 Q Okay. 6 A But I'm more familiar with Buz'Zard. 7 Q Okay. Well, we just looked at that 8 one; right? 9 But at least -- 10 A Yeah. 11 Q -- that's what the authors state in 12 their introduction -- 13 A Yeah. 14 Q -- regarding talc; correct? 15 A Yes. 16 Q And, then, we'll just go to the 17 conclusion. 18 A Uh-huh. 19 Q The last paragraph. "In conclusion, 20 both IN" -- which is Indian nano particles or 21 nano talc -- "and CN" -- which is commercial nano 22 talc particles, "significantly induce 23 cytotoxicity, oxidative stress and apoptosis in 24 human lung epithelial cells."</p>	<p style="text-align: right;">Page 421</p> <p>1 literally five minutes, but I went through some 2 of the figures. This paper shows a lot of 3 cytotoxicity and apoptosis with the effect of 4 talc. That's -- and this is actually in a cancer 5 cell line; right? It's human lung epithelial 6 cells. I don't think they're -- they're at least 7 immortalized. So that strikes me as different 8 than the proliferative effect he's describing. 9 MS. THOMPSON: 10 Q That wasn't my question. 11 A Okay. 12 Q My question: Do these results refute 13 Dr. Saed's work? 14 MS. CURRY: 15 Object to the form. 16 A Well, this is in lung cancer, so it's 17 pretty much irrelevant. 18 MS. THOMPSON: 19 Q And where -- where are you finding that 20 it's in lung cancer cells? 21 A Human lung epithelial A549 cells. I 22 worked with them quite a bit. It's a lung cancer 23 cell line. It's an adenocarcinoma. Top of page 24 396.</p>

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<p style="text-align: right;">Page 422</p> <p>1 Q Human lung epithelial cells?</p> <p>2 A Uh-huh.</p> <p>3 Q Those are cancer cells?</p> <p>4 A A549, if it's the same A549 which I</p> <p>5 know about, which I think it is, that's an</p> <p>6 adenocarcinoma.</p> <p>7 Q Do you see anywhere in the paper where</p> <p>8 it describes those as cancer cells?</p> <p>9 A Just let me look at the back. I don't</p> <p>10 see it, although I've rushed through this. But I</p> <p>11 don't see it.</p> <p>12 Q I know. I don't see it either.</p> <p>13 They're just described as human lung epithelial</p> <p>14 cells, which doesn't sound like they were</p> <p>15 considered to be cancer cells.</p> <p>16 I'm not sure I got the answer to the</p> <p>17 question "Is there anything in either of these</p> <p>18 Akhtar papers that refutes Dr. Saed's findings?"</p> <p>19 A No.</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Do both of these Akhtar papers</p> <p>24 demonstrate biological effect from talc particles</p>	<p style="text-align: right;">Page 424</p> <p>1 MS. CURRY:</p> <p>2 Oh. I'm so sorry. Thank you.</p> <p>3 EXAMINATION</p> <p>4 BY MS. CURRY:</p> <p>5 Q Dr. Birrer, you have reviewed</p> <p>6 Dr. Clarke-Pearson's expert report; correct?</p> <p>7 A Yes.</p> <p>8 Q Do you think his opinions overall are</p> <p>9 based on sound science?</p> <p>10 A No.</p> <p>11 Q Do you defer to him on any issue</p> <p>12 presented in this case?</p> <p>13 A No.</p> <p>14 Q Do you defer to any of the plaintiffs'</p> <p>15 experts on any issues presented in this case?</p> <p>16 A No.</p> <p>17 MS. CURRY:</p> <p>18 I have no further questions.</p> <p>19 Thank you.</p> <p>20 MS. THOMPSON:</p> <p>21 I'm done.</p> <p>22 VIDEOGRAPHER:</p> <p>23 Okay. This concludes this deposition.</p> <p>24 The time is 6:04 p.m. We're off the</p>
<p style="text-align: right;">Page 423</p> <p>1 on cell culture --</p> <p>2 MS. CURRY:</p> <p>3 Object to --</p> <p>4 MS. THOMPSON:</p> <p>5 Q -- lines?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A I would say yes, that there is some</p> <p>9 activity.</p> <p>10 MS. THOMPSON:</p> <p>11 If we can take just a short break, I</p> <p>12 think I'm finished.</p> <p>13 VIDEOGRAPHER:</p> <p>14 Off the record at 5:48 p.m.</p> <p>15 (OFF THE RECORD.)</p> <p>16 VIDEOGRAPHER:</p> <p>17 We're back on the record at 6:03 p.m.</p> <p>18 MS. THOMPSON:</p> <p>19 Dr. Birrer, I have no further</p> <p>20 questions. Thank you for your time today.</p> <p>21 MS. CURRY:</p> <p>22 I have just a few follow-up questions.</p> <p>23 VIDEOGRAPHER:</p> <p>24 Counsel, your microphone.</p>	<p style="text-align: right;">Page 425</p> <p>1 record.</p> <p>2 (Deposition concluded at 6:04 p.m.)</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>

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<p>1 CERTIFICATE</p> <p>2 STATE OF ALABAMA)</p> <p>3 COUNTY OF MOBILE)</p> <p>4</p> <p>5 I do hereby certify that the above and</p> <p>6 foregoing transcript of proceedings in the matter</p> <p>7 aforementioned was taken down by me in machine</p> <p>8 shorthand, and the questions and answers thereto</p> <p>9 were reduced to writing under my personal</p> <p>10 supervision, and that the foregoing represents a</p> <p>11 true and correct transcript of the proceedings</p> <p>12 given by said witness upon said hearing.</p> <p>13 I further certify that I am neither of</p> <p>14 counsel nor of kin to the parties to the action,</p> <p>15 nor am I in anywise interested in the result of</p> <p>16 said cause.</p> <p>17 Signed this 22nd day of March, 2019.</p> <p>18</p> <p>19</p> <p>20 LOIS ANNE ROBINSON, RDR</p> <p>21 COURT REPORTER, NOTARY PUBLIC</p> <p>22 STATE OF ALABAMA AT LARGE</p> <p>23 ACCR# 352; EXPIRES 9/30/19</p> <p>24</p>	<p>1 - - - - -</p> <p>2 E R R A T A</p> <p>3 - - - - -</p> <p>4</p> <p>5 PAGE LINE CHANGE</p> <p>6 REASON: _____</p> <p>7</p> <p>8 REASON: _____</p> <p>9</p> <p>10 REASON: _____</p> <p>11</p> <p>12 REASON: _____</p> <p>13</p> <p>14 REASON: _____</p> <p>15</p> <p>16 REASON: _____</p> <p>17</p> <p>18 REASON: _____</p> <p>19</p> <p>20 REASON: _____</p> <p>21</p> <p>22 REASON: _____</p> <p>23</p> <p>24 REASON: _____</p>
<p>Page 427</p> <p>1 INSTRUCTIONS TO WITNESS</p> <p>2</p> <p>3 Please read your deposition</p> <p>4 over carefully and make any necessary</p> <p>5 corrections. You should state the reason</p> <p>6 in the appropriate space on the errata</p> <p>7 sheet for any corrections that are made.</p> <p>8 After doing so, please sign</p> <p>9 the errata sheet and date it.</p> <p>10 You are signing same subject</p> <p>11 to the changes you have noted on the</p> <p>12 errata sheet, which will be attached to</p> <p>13 your deposition.</p> <p>14 It is imperative that you</p> <p>15 return the original errata sheet to the</p> <p>16 deposing attorney within thirty (30) days</p> <p>17 of receipt of the deposition transcript</p> <p>18 by you. If you fail to do so, the</p> <p>19 deposition transcript may be deemed to be</p> <p>20 accurate and may be used in court.</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>	<p>Page 429</p> <p>1</p> <p>2 ACKNOWLEDGMENT OF DEPONENT</p> <p>3</p> <p>4 I, _____, do</p> <p>5 hereby certify that I have read the</p> <p>6 foregoing pages, and that the same is</p> <p>7 a correct transcription of the answers</p> <p>8 given by me to the questions therein</p> <p>9 propounded, except for the corrections or</p> <p>10 changes in form or substance, if any,</p> <p>11 noted in the attached Errata Sheet.</p> <p>12</p> <p>13</p> <p>14</p> <p>15 _____</p> <p>16 MICHAEL BIRRER, M.D., PH.D. DATE</p> <p>17</p> <p>18 Subscribed and sworn</p> <p>19 to before me this</p> <p>20 _____ day of _____, 20____.</p> <p>21 My commission expires: _____</p> <p>22</p> <p>23 _____</p> <p>24 Notary Public</p>

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Exhibit B

**UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY**

**IN RE JOHNSON & JOHNSON
TALCUM POWDER PRODUCTS
MARKETING, SALES PRACTICES,
AND PRODUCTS LIABILITY
LITIGATION**

THIS DOCUMENT RELATES TO ALL CASES

MDL NO. 16-2738 (FLW) (LHG)

**RULE 26 EXPERT REPORT OF
DR. GHASSAN M. SAED**

Date: November 16, 2018

**Dr. Ghassan
Saed, Associate
Professor**

Digitally signed by Dr. Ghassan Saed,
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Professor, o=Wayne State University
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Date: 2018.11.16 15:00:14 -05'00'

Dr. Ghassan M. Saed

Molecular basis for the association of talcum powder use with increased risk of ovarian cancer.

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Qualifications

In this report, I describe the role of oxidative stress in the pathogenesis and behavior of ovarian cancer, as well as describe the biological effects of talcum powder on normal ovarian and fallopian tube cells, macrophages, and ovarian cancer cells.

I am an Associate Professor with tenure at Wayne State University in Detroit, Michigan, where I am Director of Ovarian Cancer Research. I am a faculty member in the Departments of Obstetrics & Gynecology, Cell Biology, and Anatomy & Physiology at Wayne State School of Medicine. I am also a Member of the Karmanos Cancer Institute, Molecular Biology and Genetics Program.

I received a Ph.D. in Molecular Biology at the University of Essex, Colchester, England in 1986. My postgraduate training included a Fellowship in Immunopathology at the University of Michigan, Ann Arbor from 1992-1993 and a Fellowship in Molecular Biology at the Henry Ford Hospital in Detroit, Michigan from 1988-1990. I joined the faculty at Wayne State School of Medicine in 1998.

My laboratory investigates the role of oxidative stress in the pathogenesis of ovarian cancer. This concentration arose from my original research that focused on the molecular mechanisms involved in the pathogenesis of tissue fibrosis and the need to compare the effects of oxidative stress on a malignant overgrowth versus a benign overgrowth, specifically postoperative adhesions.

My research in ovarian cancer has resulted in the identification of biomarkers for assessing the progression and metastasis of ovarian cancer. The major outcome of my work with fibrosis and postoperative adhesions, in addition to the development of the ex-vivo model for adhesion, was the development and characterization of the adhesion phenotype in cell culture. Additionally,

the cell culture system was used to test the hypothesis that hypoxia is the trigger for the development of postoperative adhesions.

I have taught numerous undergraduate, graduate, medical students, residents, and fellows. Many of these have received research awards, published important papers, and accepted prestigious academic faculty positions. I have been the recipient of national and international grants and contracts from organizations including the American Association for Cancer Research (AACR), NIH/NICHD, U.S. Department of Defense, the Ovarian Cancer Research Fund Alliance, the Michigan Ovarian Cancer Alliance, and other ovarian cancer foundations. I have been a prolific publisher and presenter at scientific meetings. I have been an author on 136 original studies published in peer-reviewed journals with additional review articles, and book chapters. Recently, I published a review article in the journal, Gynecologic Oncology titled, “Updates of the role of oxidative stress in the pathogenesis of ovarian cancer” and a textbook chapter titled “New insights into the Pathogenesis of Ovarian Cancer: Oxidative Stress” summarizing my research in this area. My CV is attached as Exhibit A. In addition to the references included in this report, the materials I reviewed are attached as Exhibit B. My fees and prior testimony are attached as Exhibit C.

Ovarian cancer

Ovarian cancer is the most lethal gynecologic malignancy and ranks fifth in cancer deaths among women diagnosed with cancer¹. Epithelial ovarian cancer (EOC) has long been considered a heterogeneous disease with respect to histopathology, molecular biology, and clinical outcome^{1,2}. It comprises at least five distinct histological subtypes, the most common and well-studied being high-grade serous ovarian cancer. In the last decade, researchers have proposed the theory that many ovarian cancers arise from the distal fallopian tubes. For this reason, as well as the similarities in pathogenesis, presentation, treatment, and prognosis, fallopian tube, ovarian, and

peritoneal cancer are generally treated as a single entity. Although surgical techniques and treatments have advanced over the years, the prognosis of EOC remains poor, with a 5-year survival rate of 50% in advanced stage ². This is largely due to the lack of early warning symptoms and screening methods, and the development of chemoresistance ^{1,2}. Ovarian cancer is known to be associated with germline mutations in the BRCA1 or BRCA2 genes, but with a rate of only 20-40%, suggesting the presence of other unknown mutations in other predisposition genes ³. Additional genetic variations including single nucleotide polymorphisms (SNPs) have been described to act as low to moderate penetrant alleles that contribute to ovarian cancer risk ^{3,4}. Non-synonymous SNPs substitute encoded amino acids in proteins and are more likely to alter the structure, function, and interaction of the protein ⁴. The pathophysiology of EOC is not fully understood but has been strongly associated with inflammation and the resultant oxidative stress⁵.

Oxidative stress

Homeostasis, the balance between the production and elimination of oxidants, is maintained by mechanisms involving oxidants and antioxidant enzymes and molecules. If this balance is altered, it leads to an enhanced state of oxidative stress that alters key biomolecules and cells of living organism ⁵. Oxidant molecules are divided into two main groups; oxygen-derived or nitrogen-containing molecules. Oxygen-derived molecules, also known as reactive oxygen species (ROS), include free radicals such as hydroxyl (HO^\bullet), superoxide ($\text{O}_2^{\bullet-}$), peroxy (RO_2^\bullet), and alkoxy (RO^\bullet), as well as oxidizing agents such as hydrogen peroxide (H_2O_2), hypochlorous acid (HOCl), ozone (O_3), and singlet oxygen ($^1\text{O}_2$) that can be converted to radicals ^{5,6}. Nitrogen containing oxidants, also known as reactive nitrogen species (RNS), are derived from nitric oxide (NO) that is produced in the mitochondria in response to hypoxia ⁵. Exposure to inflammation, infection, carcinogens, and toxicants are major sources of ROS and RNS, *in vivo* ⁵⁻⁸. Additionally,

RNS and ROS can be produced by various enzymes including cytochrome P450, lipoxygenase, cyclooxygenase, nicotinamide adenine dinucleotide phosphate (NAD(P)H) oxidase complex, xanthine oxidase (XO), and peroxisomes (Figure 1) ^{5,7,9}.

To maintain the redox balance, ROS and RNS are neutralized by various important enzyme systems including superoxide dismutase (SOD), catalase (CAT), glutathione S-transferase (GST), glutathione (GSH), thioredoxin coupled with thioredoxin reductase, glutaredoxin, glutathione peroxidase (GPX), and glutathione reductase (GSR) ⁶. Superoxide dismutase is known to convert $O_2^{\bullet-}$ to H_2O_2 , which is then converted to water by CAT. Glutathione S-transferase is involved in detoxification of carcinogens and xenobiotics by catalyzing their conjugation to GSH that will aid in expulsion from the cell ⁶. Indeed, the GSH-to-oxidized-GSH (GSH/GSSG) ratio is a good indicator of cellular redox buffering capacity ^{10,11}. Under enhanced oxidative stress, the GSH/GSSG complex is known to stimulate the activity of the GS-X-MRP1 efflux pump, which removes toxins from cells. This mechanism has been investigated in the development of resistance to chemotherapeutic drugs ^{10,11}.

Ovarian Cancer Cells Manifest a Persistent Pro-Oxidant State

Recent evidence demonstrates that oxidative stress is a critical factor in the initiation and development of several cancers, including ovarian cancer ^{12,13}. Consistently, it has been reported that ovarian cancer patients manifest significantly decreased levels of antioxidants and higher levels of oxidants ¹²⁻¹⁷. An enhanced redox state, resulting from increased expression of key pro-oxidant enzymes and decreased expression of antioxidant enzymes, has been extensively described in epithelial ovarian cancer (EOC) ¹⁶⁻¹⁸. My laboratory has previously reported that MPO, a hemoprotein present solely in myeloid cells that acts as a powerful oxidant, and iNOS, a key pro-oxidant enzyme, are highly expressed and co-localized to the same cell in EOC cells ¹⁷. These two

enzymes, MPO and iNOS, work together to inhibit apoptosis, a hallmark of ovarian cancer cells. Apoptosis, or programmed cell death, refers to the normal and controlled death of cells. Myeloperoxidase acts as powerful oxidant enzyme in EOC cells through the utilization of nitric oxide (NO) produced by iNOS as a one-electron substrate generating NO^+ , a labile nitrosylating species¹⁹⁻²¹. My laboratory was the first to report that MPO was expressed by EOC cells and tissues¹⁷. Silencing MPO gene expression utilizing MPO specific siRNA induced apoptosis in EOC cells through a mechanism that involved the S-nitrosylation of caspase-3 by MPO¹⁷. Additionally, there is compelling evidence that MPO serves as a source of free iron under oxidative stress, where both NO^+ and superoxide are elevated¹⁹. Iron reacts with hydrogen peroxide (H_2O_2) and catalyzes the generation of highly reactive hydroxy radical (HO^\bullet), thereby increasing oxidative stress, which in turn increases free iron concentrations by the Fenton and Haber–Weiss reaction^{19,21}. Additionally, my laboratory has highlighted the potential benefits of the combination of serum MPO and free iron as biomarkers for early detection and prognosis of ovarian cancer¹⁴. EOC cells are also characterized by enhanced expression of NAD(P)H oxidase, a potent oxidant enzyme that is known to be the major source of $\text{O}_2^{\bullet-}$ in the cell. Such high levels of $\text{O}_2^{\bullet-}$ combined with significantly high levels of NO generates peroxynitrite, another powerful nitrosylation and nitration agent, which modifies proteins and DNA structure and function in cells²².

A reliable screening and detection method based on molecular profiles for ovarian cancer has not yet been developed because the disease exhibits a wide range of morphological, clinical and genetic variations during its progression. The search for non-invasive, cost-effective ovarian cancer biomarker tests has been ongoing for many years. Immunizations of mice with ovarian cancer cells has led to hybridoma validation by ELISA, while flow cytometry analysis permitted the discovery of cancer antigen (CA)-125 (the only marker currently used in clinical practice) and

mesothelin²³. Furthermore, the screening of an array of 21,500 unknown ovarian cDNAs hybridized with labeled first-strand cDNA from ten ovarian tumors and six normal tissues led to the discovery of human epididymis protein 4 (HE4)²⁴. Most interestingly, HE4 is overexpressed in 93% of serous and 100% of endometrioid EOCs, and in 50% of clear cell carcinomas, but not in mucinous ovarian carcinomas²⁵. Thus, HE4 was identified as one of the most useful biomarkers for ovarian cancer, although it lacked tissue-specificity^{24,26-28}. Secreted HE4 high levels were also detected in the serum of ovarian cancer patients²⁹. Additionally, combining CA-125 and HE4 is a more accurate predictor of malignancy than either alone³⁰⁻³². The discovery of MPO expression in ovarian EOC cells and tissues was surprising, as it is only expressed by cells of myeloid origin. Intriguingly, my laboratory has previously reported that the combination of serum MPO and free iron may serve as biomarkers for early detection of ovarian cancer¹⁴.

Common Polymorphisms in Redox Enzymes are Associated with Ovarian Cancer.

A single nucleotide polymorphism (SNP) occurs as a result of gene point mutations with an estimated frequency of at least one in every 1000 base pairs that are selectively maintained and distributed in populations throughout the human genome³³. An association between common SNPs in oxidative DNA repair genes and redox genes with human cancer susceptibility has been established⁷. Common SNPs in the redox enzymes are known to be strongly associated with an altered enzymatic activity in these enzymes, and helps explain the enhanced redox state that has been linked to several malignancies, including ovarian cancer^{12,16}. Additionally, it helps explain the observation of significantly decreased apoptosis and increased survival of EOC cells¹⁷. It is therefore critical to determine the exact effect of common SNPs in various redox enzymes on all process involved in the development of the oncogenic phenotype³⁴⁻³⁷. Such studies can be linked to other studies focusing on determining the effects of genes involved in carcinogen metabolism

(detoxification and/or activation), redox enzymes, and DNA repair pathways³⁶. Numerous SNPs associated with change of function have been identified in antioxidant enzymes including *CAT*, *GPX1*, *GSR*, and *SOD2*^{35,37}. Additionally, the association between genetic polymorphisms in genes with anti-tumor activity and those involved in the cell cycle has been reported in ovarian cancer^{38,39}. Recently, several genetic variations have been identified in genome-wide association studies (GWAS), and were found to act as low to moderate penetrant alleles, which contribute to ovarian cancer risk, as well as other diseases^{4,40}.

There is now an association of specific SNPs in key oxidant and anti-oxidant enzymes that impact increased risk of ovarian cancer and/or overall survival of patients with ovarian cancer^{34,35}. A common SNP that reduced CAT activity (rs1001179) was utilized as a significant predictor of death when present in ovarian cancer patients and was also associated with increased risk for breast cancer^{34,35,37,41}. This SNP is also linked to increased risk, survival, and response to adjuvant treatment of cancer patients, including ovarian^{34,42}. Another common SNP that reduced CYBA activity (rs4673) was also reported to be associated with an increased risk for ovarian cancer^{34,35}. The mutant genotype of the *CYBA* gene has been shown to both decrease and increase activity of the protein, thereby altering the generation of $O_2^{\bullet-}$ ^{34,35}. Moreover, functionally distinct *MPO* polymorphisms, such as (rs2333227) have been linked to relative increased risk for development of ovarian cancer as well as other cancers^{34,35,43}. Additional SNPs that influenced the risk of EOC have been successfully identified from the GWAS studies including rs3814113 (located at 9p22, near *BNC2*), rs2072590 (located at 2q31, which contains a family of *HOX* genes), rs2665390 (located at 3q25, intronic to *TIPARP*), rs10088218 (located at 8q24, 700 kb downstream of *MYC*), rs8170 (located at 19p13, near *MERIT40*), and rs9303542 (located at 17q21, intronic to *SKAP1*)

^{34,35}. Thus, the genetic component of increased ovarian cancer risk may be attributed to SNPs that result in point mutations in the redox genes and potentially other genes ⁴⁴.

Chemoresistance is Associated with Point Mutations in Key Redox Enzymes in EOC cells

To date, the acquisition of chemoresistance in ovarian cancer is being investigated. The enhanced oxidant state reported in chemoresistant EOC cells is likely linked to point mutations in key redox enzymes ³⁵. Chemoresistant EOC cells manifested increased levels of CAT, GPX, and iNOS and decreased levels of GSR, SOD, and NAD(P)H oxidase as compared to their sensitive counterparts ³⁵. Interestingly, chemoresistant EOC cells, and not their sensitive counterparts, manifested specific point mutations that corresponded to known functional SNPs, in key redox enzymes including *SOD2* (rs4880), *NOS2* (rs2297518), and *CYBA* (rs4673) ⁴⁵. However, altered enzymatic activity for CAT and GSR observed in chemoresistant EOC cells did not correspond to the specific SNP of interest in those enzymes, indicating involvement of other possible functional SNPs for those enzymes ³⁵. Coincidentally, chemotherapy treatment induced point mutations that happen to correspond to known functional SNPs in key oxidant enzymes subsequently led to the acquisition of chemoresistance by EOC cells. Indeed, the induction of specific point mutations in *SOD2* or *GPX1* in sensitive EOC cells resulted in a decrease in the sensitivity to chemotherapy of these cells ³⁵. In fact, the addition of *SOD* to sensitive EOC cells during chemotherapy treatment synergistically increased the efficacy to chemotherapy ³⁵.

Alternatively, the observed nucleotide switch in response to chemotherapy in EOC cells may be the result of nucleotide substitution, a process that includes transitions, replacement of one purine by the other or that of one pyrimidine by the other, or transversions, replacement of a purine by a pyrimidine or vice versa ³⁵. Actually, hydroxyl radicals are known to react with DNA causing the formation of many pyrimidine and purine-derived lesions ³⁵. The oxidative damage to 8-Oxo-

2'-deoxyguanosine, a major product of DNA oxidation, induces genetic alterations in oncogenes and tumor suppressor genes that have been involved in tumor initiation and progression³⁵. A GC to TA transversion has been reported in the *ras* oncogene and the *p53* tumor suppressor gene in several cancers. However, the GC to TA transversion is not unique to hydroxy-2'-deoxyguanosine, as CC to TT substitutions have been identified as signature mutations for oxidants and free radicals³⁵. Moreover, the observed nucleotide switch in response to chemotherapy in EOC cells can be due to the fact that acquisition of chemoresistance generates an entirely different population of cells with a distinct genotype. Hence, chemotherapy kills the bulk of the tumor cells leaving a subtype of cancer cells with ability for repair and renewal, known as cancer stem cells (CSCs)³⁵. Indeed, cancer stem cells have been isolated from various types of cancer including leukemia, breast, brain, pancreatic, prostate, ovary and colon³⁵. Interestingly, CSC populations were present in cultures of SKOV-3 EOC cells and have been shown to be chemoresistant in nature³⁵.

Talcum powder and increased risk of ovarian cancer

Talcum powder is made from talc, a mineral containing mainly of the elements magnesium, silicon, and oxygen. In its natural form, some talc contains asbestos. Talc and asbestos are both silicate minerals; the carcinogenic effects of asbestos have been extensively studied and documented in the medical literature^{46,47}. Asbestos fibers in the lung initiate an inflammatory and scarring process, and it has been proposed that ground talc, as a foreign body, initiates a similar inflammatory response and it has been proposed that ground talc, as a foreign body, might initiate an inflammatory response^{48,47}. There has been concern about a possible link between talcum powder usage in the genital and ovarian cancer, as well as lung cancer in workers exposed to talc in an occupational setting⁴⁹. Studies that exposed lab animals (rats, mice, and hamsters) to asbestos-free talcum powder in various ways have had mixed results, with some showing tumor

formation and others finding only inflammation^{50,51}. The International Agency for Research on Cancer (IARC) is part of the World Health Organization (WHO). Its major goal is to identify causes of cancer. Based on limited evidence from human studies of a link to ovarian cancer, IARC classified the perineal (genital) use of talc-based body powder (not containing asbestiform fibers) as “possibly carcinogenic to humans.” (Group 2b)⁸⁸. Talcum powder containing asbestos and fibrous talc are both considered carcinogenic (Group 1) by IARC⁸⁹.

The association between perineal talc powder dusting and ovarian cancer has been studied in at least 25 case-control studies, three cohort studies, six meta-analyses and one pooled study⁷³. Although the cohort studies individually did not show a statistically significant increased risk of ovarian cancer with talcum powder usage, the case-control studies overall and the meta-analyses show a consistent and significant increased risk. This risk is estimated to be 30-40%. The studies have shown conflicting results regarding the presence of a dose-response, largely due to the failure of many studies to obtain necessary information on the frequency and duration of usage and the inherent challenge of quantifying actual exposure. Although migration/transport of particles through the genital tract is universally accepted and the inflammatory nature of talcum powder consistently demonstrated, the exact mechanism for carcinogenesis had not been conclusively elucidated. For these reasons, there has been some reluctance in the scientific community to accept talcum powder as a causative risk factor for the development of ovarian cancer. The most recent meta-analysis, reported by Penninkilampi and Eslick in 2017, found that any perineal talc use was associated with a statistically significant increased risk of ovarian cancer (OR = 1.31). More than 3600 lifetime applications (OR = 1.42) were slightly more associated with ovarian cancer than <3600 (OR = 1.32). An association with ever use of talc was found in case-control studies (OR = 1.35), but not cohort studies (OR = 1.06). However, cohort studies found an association between

talc use and invasive serous type ovarian cancer (OR = 1.25), the most common and most lethal subtype. In the opinion of the authors, meta-analysis is the highest level of evidence in this setting because of the need for a large number of cases and long-term follow-up in a relatively rare form of cancer with a lengthy latency period. The authors of this meta-analysis suggested that cellular injury, oxidative stress, and local increase in inflammatory mediators might be the mechanism by which talcum powder promotes carcinogenesis, but that this mechanism was unclear. They recognized the “substantial need for further research on a potential mechanism by which ovarian cancer may be caused by talc, as this will allow a causal relationship to be established or rejected with more certainty”⁷³.

In addition to epidemiological studies, the claim that regular use of talcum powder for perineal hygiene purpose is associated with an increased risk of ovarian cancer is based on several reports confirming the presence of talc particles in the ovaries and other parts of the female reproductive tract as well as in lymphatic vessels and tissues of the pelvis^{45,75}. Henderson first reported the presence of talc particles in ovaries in 1971. A study by Cramer, et al has reported the presence of talc in pelvic lymph nodes of a woman with ovarian cancer who used talc daily for 30 years⁴⁵. The ability of talc particles to migrate through the genital tract to the distal fallopian tube and ovaries is well accepted^{45,75}.

It has been suggested that the associations between perineal talc dusting and ovarian cancer might be explained by the induction of ANTI-MUC1 antibodies⁵⁷. Additionally, in a previous study by Shukla et.al., whereby human mesothelial cells (LP9/TERT-1) were exposed to low and high (15 and 75 mm²/cm² dish) equal surface area concentrations of nonfibrous talc for 8 or 24 hours, the authors found that nonfibrous talc at low concentrations to cause an increase in the

expression of Activating Transcription Factor 3 (ATF3) at 8 hours and no changes at 24 hours, whereas expression levels of 30 genes were elevated at 8 hours at high talc concentrations⁷⁸.

My laboratory undertook research to determine whether or not there was a molecular basis for the observed association between talcum powder and ovarian cancer. If a biological effect was demonstrated, we hoped to define the mechanism in detail. Issues like this one, relating to the pathogenesis of ovarian cancer and the relationship between inflammation and other pathological conditions in the female reproductive system as well as cancer, have been the focus of my laboratory for many years.

Findings from recent research from our laboratory relating to the effects of talcum powder exposure *in vitro*

The following is a description of the methodology used:

Cell Lines: Ovarian cancer cells: SKOV-3 (ATCC), A2780 (Sigma Aldrich), and TOV112D (a kind gift from Gen Sheng Wu at Wayne State University, Detroit, MI)²⁵. Normal cell lines: human macrophage cells (EL-1, ATCC), human primary normal ovarian epithelial cells (Cell Biologics), Human Ovarian Epithelial Cells (HOSEpiC, ScienCell Research Laboratories, Inc.) immortalized human fallopian tube secretory epithelial cells (FT33-shp53-R24C, Applied Biological Materials). All cells were grown in media and conditions following manufacturer's protocol. EL-1 cells were grown in IMDM media (ATCC) supplemented with 0.1 mM hypoxanthine and 0.1 mM thymidine solution (H-T, ATCC) and 0.05mM β -mercaptoethanol. SKOV-3 EOC cells were grown in HyClone McCoy's 5A medium (Fisher Scientific), A2780 EOC cells were grown in HyClone RPMI-1640 (Fisher Scientific), and both TOV112D EOC cells were grown in MCDB105 (Cell Applications) and Medium 199 (Fisher Scientific) (1:1). All media was supplemented with fetal bovine serum (FBS, Innovative Research) and penicillin/streptomycin

(Fisher Scientific), per their manufacturer specifications. Human primary normal ovarian epithelial cells were grown in Complete Human Epithelial Cell Medium (Cell Biologics).

Treatment of cells: Talcum powder (Fisher Scientific, Catalog #T4-500, Lot#166820) or Johnson's Baby Powder (Johnson & Johnson, #30027477, Lot#13717RA) was dissolved in DMSO (Sigma Aldrich) at a concentration of 500 mg in 10 ml and was filtered with a 0.2 μ m syringe filter (Corning). Sterile DMSO was used as a control for all treatments. Cells were seeded in 100 mm cell culture dishes (3×10^6) and were treated 24 hours later with 0, 5, 20, or 100 μ g/ml of talc for 48 hours. Cell pellets were collected for RNA, DNA, and protein extraction. Cell culture media was collected for CA-125 analysis by ELISA.

Real time RT-PCR: Total RNA was extracted from all cells using the RNeasy Mini Kit (Qiagen) according to the protocol provided by the manufacturer. Measurement of the amount of RNA in each sample was performed using a Nanodrop Spectrophotometer (Thermo Fisher Scientific). A 20 μ L cDNA reaction volume containing 0.5 μ g RNA was prepared using the SuperScript VILO Master Mix Kit (Life Technologies), as described by the manufacturer's protocol. Optimal oligonucleotide primer pairs were selected for each target using Beacon Designer (Premier Biosoft, Inc., Table 1). Quantitative RT-PCR was performed using the EXPRESS SYBR Green ER qPCR Supermix Kit (Life Technologies) and the Cepheid 1.2f Detection System as previously described²⁴. Standards with known concentrations and lengths were designed specifically for β -actin (79 bp), CAT (105 bp), iNOS (89 bp), GSR (103 bp), GPX1 (100 bp), MPO (79 bp), and SOD3 (84 bp), allowing for construction of a standard curve using a 10-fold dilution series²⁶. A specific standard for each gene allows for absolute quantification of the gene in number of copies, which can then be expressed per microgram of RNA. All samples

were normalized to the housekeeping gene, β -actin. A final melting curve analysis was performed to demonstrate specificity of the PCR product.

Protein Detection: Cell pellets were lysed utilizing cell lysis buffer (20 mM Tris-HCl (pH 7.5), 150 mM NaCl, 1 mM Na₂EDTA, 1 mM EGTA, 1% Triton, 2.5 sodium pyrophosphate, 1 mM beta-glycerophosphate, 1 mM Na₃VO₄, 1 μ g/ml leupeptin) containing a cocktail of protease inhibitors. Samples were centrifuged at 13000 rpm for 10 minutes at 4°C. Total protein concentration of cell lysates from control and talc-treated cells was measured with the Pierce BCA Protein Assay Kit (Thermo Scientific, Rockford, Illinois) per the manufacturer's protocol.

Detection of protein/activity by ELISA: ELISA kits for each target were purchased and used according to the manufacturer's protocol. The following ELISA kits were purchased from Cayman Chemical, Ann Arbor, MI: CAT, SOD3, GSR, GPX1, and MPO. Nitrite (NO₂⁻)/nitrate (NO₃⁻) were determined spectrophotometrically by measuring their absorbance at 210 nm after separation by HPLC with standard NO₂⁻/NO₃⁻ as previously reported¹⁹. The analysis was performed by a HPLC system (Shimadzu Scientific Instruments, Inc.) including a LC-10ADV pump, fr-10A injector and DGU-14A degasser. Nitrite/nitrate were detected using an RF-10 XL fluorescence detector with 210 nm excitation and 440 nm emission. CA-125 protein levels were measured in cell media by ELISA from Ray Biotech according to the manufacturer's protocol.

TaqMan® SNP Genotyping Assay: DNA was isolated utilizing the EZ1 DNA Tissue Kit (Qiagen Valencia, CA) for EOC cells according the manufacturer's protocols. The TaqMan® SNP Genotyping Assay Set (Applied Biosystems, Carlsbad, CA) (NCBI dbSNP genome build 37, MAF source 1000 genomes) were used to genotype the SNPs described in Table 1. The Applied Genomics Technology Center (AGTC, Wayne State University, Detroit, MI) performed these

assays. Analysis was done utilizing the QuantStudio™ 12 K Flex Real-Time PCR System (Applied Biosystems).

Statistical Analysis: Normality was examined using the Kolmogorov-Smirnov test and by visual inspection of quantile-quantile plots. Because most of the data were not normally distributed, differences in distributions were examined using the Kruskal-Wallis test. Generalized linear models were fit to examine pairwise differences in estimated least squares mean expression values by exposure to 0, 5, 20 or 100 ug/ml of Talc. We used the Tukey-Kramer adjustment for multiple comparisons, and the regression models were fit using log₂ transformed analyte expression values after adding a numeric constant '1' to meet model assumptions while avoiding negative transformed values. P-values below 0.05 are statistically significant.

Research Findings: Recent studies from our laboratory have shown conclusively that talcum powder alter key redox and inflammatory markers, enhance cell proliferation, and inhibit apoptosis in EOC cells, which are hallmarks of ovarian cancer. More importantly, this effect is also manifested by talcum powder in normal cells, including surface ovarian epithelium, fallopian tube, and macrophages. Oxidative stress has been implicated in the pathogenesis of ovarian cancer, specifically, by increased expression of several key pro-oxidant enzymes such as iNOS, MPO, and NAD(P)H oxidase in EOC tissues and cells as compared to normal cells indicating an enhanced redox state, as we have recently demonstrated ¹⁹. This redox state is further enhanced in chemoresistant EOC cells as evident by a further increase in iNOS and NO₂⁻/NO₃⁻ and a decrease in GSR levels, suggesting a shift towards a pro-oxidant state ¹⁹. Antioxidant enzymes, key regulators of cellular redox balance, are differentially expressed in various cancers, including ovarian ^{19,79}. Specifically, GPX expression is reduced in prostate, bladder, and estrogen receptor negative breast cancer cell lines as well as in cancerous tissues from the kidney. However, GPX

activity is increased in cancerous tissues from breast⁷⁹. Glutathione reductase levels, on the other hand, are elevated in lung cancer, although differentially expressed in breast and kidney cancerous tissues^{5,80}. Similarly, CAT was decreased in breast, bladder, and lung cancer while increased in brain cancer⁸¹⁻⁸³. Superoxide dismutase is expressed in lung, colorectal, gastric ovarian, and breast cancer, while decreased activity and expression have been reported in colorectal carcinomas and pancreatic cancer cells⁸³⁻⁸⁶. Collectively, this differential expression of antioxidants demonstrates the unique and complex redox microenvironment in cancer. Glutathione reductase is a flavoprotein that catalyzes the NADPH-dependent reduction of oxidized glutathione (GSSG) to GSH. This enzyme is essential for the GSH redox cycle which maintains adequate levels of reduced cellular GSH. A high GSH/GSSG ratio is essential for protection against oxidative stress. Treatment with talc significantly reduced GSR in normal and cancer cells, altering the redox balance. Likewise, GPX is an enzyme that detoxifies reactive electrophilic intermediates and thus plays an important role in protecting cells from cytotoxic and carcinogenic agents. Overexpression of GPX is triggered by exogenous chemical agents and reactive oxygen species, and is thus thought to represent an adaptive response to stress⁸⁰. Treatment of normal and cancer cells with talc significantly reduced GPX, which compromised the overall cell response to stress.

We have previously reported that EOC cells manifest increased cell proliferations and decreased apoptosis¹⁹. Consistent with these findings, recent studies from my laboratory have shown that talc enhances cell proliferation and induces an inhibition in apoptosis in EOC cells, but more importantly in normal cells, suggesting talc is a stimulus to the development of the oncogenic phenotype. We also previously reported a cross-talk between iNOS and MPO in ovarian cancer which contributed to the lower apoptosis observed in ovarian cancer cells^{17,19}. Collectively, we now have substantial evidence demonstrating that altered oxidative stress may play a role in

maintaining the oncogenic phenotype of EOC cells. Treatment of normal or ovarian cancer cells with talc resulted in a significant increase in MPO and iNOS, supporting the role of talc in the enhancement of a pro-oxidant state that is a major cause in the development and maintenance of the oncogenic phenotype.

Furthermore, CA-125, which exists as a membrane-bound and secreted protein in epithelial ovarian cancer cells, has been established as a biomarker for disease progression and response to treatment². CA-125 expression was significantly increased from nearly undetectable levels in controls to values approaching clinical significance (35 U/ml in postmenopausal women⁸⁷) in talc treated cell lines without the physiologic effects on the tumor microenvironment one would expect to be present in the human body, highlighting the implications of the pro-oxidant states caused by talc alone.

To elucidate the mechanism by which talc alters the redox balance to favor a pro-oxidant state not only in ovarian cancer cells, but more importantly in normal cells, my laboratory examined selected known gene mutations in key oxidant and antioxidant enzymes. These mutations correspond to specific SNPs that are known to be associated with altered enzymatic activity and increased cancer risk^{34,35}. Results show that the *CAT* SNP (rs769217) which results in decreased enzymatic activity was induced in all normal cell lines tested and in TOV112D EOC lines. However, the *CAT* mutation was not detected in A2780 or SKOV-3 cell lines. Nevertheless, our results confirm a decrease in *CAT* expression and enzymatic activity in all talc treated cells, indicating the existence of other *CAT* SNPs. However, the *SOD3* (rs2536512) and *GSR* (rs8190955) SNP genotypes were not detected in any cell line, yet *SOD3* and *GSR* activity and expression were decreased in all talc treated cells, again suggesting the presence of other SNPs. Our results have also shown that all cells, except for HOSEpiC cells, manifest the SNP genotype

of *GPXI* (C/T) before talc treatment. Intriguingly, talc treatment reversed this SNP genotype to the normal genotype. Consistent with this finding, it has previously been reported that acquisition of chemoresistance by ovarian cancer cells is associated with a switch from the *GPXI* SNP genotype to the normal *GPXI* genotype³⁵. It is not understood why a *GPXI* SNP genotype predominates in untreated normal and ovarian cancer cells. Additionally, our results showed that talc treatment was associated with a genotype switch from common C/C genotype in *NOS2* in untreated cells to T/T, the SNP genotype, in talc treated cells, except in A2780 and TOV112D. Nevertheless, our results confirm an increase in iNOS expression and enzymatic activity in all talc treated cells, again suggesting the existence of other *NOS2* SNPs. Collectively, these findings demonstrate that talc treatment induced gene point mutations that happen to correspond to SNPs in locations with functional effects, thus altering overall redox balance for the initiation and development of ovarian cancer. Future studies examining such SNPs are important to fully elucidate a genotype switch mechanism induced by talc exposure.

In summary, this research clearly demonstrates that talcum powder induces inflammation and alters the redox balance favoring a pro-oxidant state in normal and EOC cells. This study has shown a dose-dependent significant increase in key pro-oxidants, iNOS, NO₂⁻/NO₃⁻, and MPO and a concomitant decrease in key antioxidant enzymes, CAT, SOD, GPX, and GSR, in all talc treated cells (both normal and ovarian cancer) compared to their controls. Additionally, there was a significant increase in CA-125 levels in all the talc treated cells compared to their controls, except in macrophages (which do not produce CA-125). The mechanism by which talc alters the cellular redox and inflammatory balance involves the induction of specific mutations in key oxidant and antioxidant enzymes that correlate with alterations in their activities. The fact that these mutations

happen to correspond to known SNPs of these enzymes indicate a genetic predisposition to developing ovarian cancer with genital talcum powder exposure.

Summary of opinions

These opinions are made to a reasonable degree of scientific certainty and are based on my experience, training, and expertise, as well as a knowledge of the relevant scientific literature and my previous and ongoing research.

1. Johnson's Baby Powder elicits an inflammatory response in normal ovarian and tubal cells and in ovarian cancer cells that can result in the development and the progression of ovarian cancer.
2. This pro-carcinogenic process involves oxidative stress, alteration of the redox environment by increasing oxidant enzymes and decreasing anti-oxidant enzymes, promotion of cell proliferation, inhibition of apoptosis, and induction of specific genetic mutations.
3. Johnson's Baby Powder exposure results in elevation of CA-125, a clinically relevant biomarker for ovarian cancer, in normal and ovarian cancer cells.
4. The molecular effects resulting from Johnson's Baby Powder exposure exhibit a clear dose-response pattern.
5. In my opinion, based on established molecular mechanisms for the pathogenesis of ovarian cancer (as evidenced in the peer-reviewed scientific literature and my previously published research) and my *in vitro* experiments, Johnson's Baby Powder exposure can cause ovarian cancer.
6. In my opinion, based on established molecular mechanisms that influence the progression and chemoresistance associated with ovarian cancer (as evidenced in the peer-reviewed

scientific literature and my previously published research) and my *in vitro* experiments,

Johnson's Baby Powder exposure worsens the prognosis for patients with ovarian cancer.

I reserve the right to amend or supplement this report as new information becomes available.

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Exhibit C

Molecular Basis Supporting the Association of Talcum Powder Use With Increased Risk of Ovarian Cancer

Reproductive Sciences
1-10

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Abstract

Genital use of talcum powder and its associated risk of ovarian cancer is an important controversial topic. Epithelial ovarian cancer (EOC) cells are known to manifest a persistent prooxidant state. Here we demonstrated that talc induces significant changes in key redox enzymes and enhances the prooxidant state in normal and EOC cells. Using real-time reverse transcription polymerase chain reaction and enzyme-linked immunosorbent assay, levels of CA-125, caspase-3, nitrate/nitrite, and selected key redox enzymes, including myeloperoxidase (MPO), inducible nitric oxide synthase (iNOS), superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPX), and glutathione reductase (GSR), were determined. TaqMan genotype analysis utilizing the QuantStudio 12K Flex was used to assess single-nucleotide polymorphisms in genes corresponding to target enzymes. Cell proliferation was determined by MTT proliferation assay. In all talc-treated cells, there was a significant dose-dependent increase in prooxidant iNOS, nitrate/nitrite, and MPO with a concomitant decrease in antioxidants CAT, SOD, GSR, and GPX ($P < .05$). Remarkably, talc exposure induced specific point mutations that are known to alter the activity in some of these key enzymes. Talc exposure also resulted in a significant increase in inflammation as determined by increased tumor marker CA-125 ($P < .05$). More importantly, talc exposure significantly induced cell proliferation and decreased apoptosis in cancer cells and to a greater degree in normal cells ($P < .05$). These findings are the first to confirm the cellular effect of talc and provide a molecular mechanism to previous reports linking genital use to increased ovarian cancer risk.

Keywords

talc, epithelial ovarian cancer, oxidative stress, single-nucleotide polymorphism, cell proliferation

Introduction

Ovarian cancer is the most lethal gynecologic malignancy and ranks fifth in cancer deaths among women diagnosed with cancer.¹ Epithelial ovarian cancer (EOC) has long been considered a heterogeneous disease with respect to histopathology, molecular biology, and clinical outcome.^{1,2} Although surgical techniques and treatments have advanced over the years, the prognosis of EOC remains poor, with a 5-year survival rate of 50% in advanced stage.² This is largely due to the lack of early warning symptoms and screening methods and the development of chemoresistance.^{1,2} Moreover, ovarian cancer is known to be associated with germline mutations in the *BRCA1* or *BRCA2* genes, but with a rate of only 20 % to 40%, suggesting the presence of other unknown mutations in other predisposition genes.³ Additional genetic variations including single-nucleotide polymorphisms (SNPs) have been hypothesized to act as low to moderate penetrant alleles that contribute to ovarian cancer risk.^{3,4}

The pathophysiology of EOC is not fully understood but has been strongly associated with inflammation and the resultant

oxidative stress.⁵ We have previously characterized EOC cells to manifest a persistent prooxidant state as evident by the upregulation of key oxidants and downregulation of key antioxidants, which is further enhanced in chemoresistant EOC cells.⁶ The expression of key prooxidant/inflammatory enzymes such as inducible nitric oxide synthase (iNOS), nicotinamide adenine dinucleotide phosphate (NAD(P)H) oxidase, and myeloperoxidase (MPO), as well as an increase in nitric oxide (NO) levels, was increased in EOC tissues and cells.⁶ Additionally, we have shown that EOC cells manifest lower apoptosis, which

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was markedly induced by inhibiting iNOS, indicating a strong link between apoptosis and NO/iNOS pathways in these cells.⁶

The cellular redox balance is maintained by key antioxidants including catalase (CAT), superoxide dismutase (SOD), or by glutathione peroxidase (GPX) coupled with glutathione reductase (GSR).⁵ Other important scavengers include thioredoxin coupled with thioredoxin reductase, and glutaredoxin, which utilizes glutathione (GSH) as a substrate.⁷ We have previously reported that a genotype switch in key antioxidants is a potential mechanism leading to the acquisition of chemoresistance in EOC cells.⁷ We have studied the effects of genetic polymorphisms in key redox genes on the acquisition of the oncogenic phenotype in EOC cells, including genes that control the levels of cellular reactive oxygen species and oxidative damage and SNPs for genes involved in carcinogen metabolism (detoxification and/or activation), antioxidants, and DNA repair pathways.^{4,6} Several function-altering SNPs have been identified in key antioxidants, including CAT, GPX, GSR, and SOD.⁴

Several studies have suggested the possible association between genital use of talcum powder and risk of EOC.⁷⁻¹² Association between the use of cosmetic talc in genital hygiene and ovarian cancer was first described in 1982 by Cramer et al, and many subsequent studies supported this finding.⁷⁻¹² Talc and asbestos are both silicate minerals; the carcinogenic effects of asbestos have been extensively studied and documented in the medical literature.⁷⁻¹² Asbestos fibers in the lung initiate an inflammatory and scarring process, and it has been proposed that ground talc, as a foreign body, might initiate a similar inflammatory response.⁷ The objective of this study was to determine the effects of talcum powder on the expression of key redox enzymes, CA-125 levels, and cell proliferation and apoptosis in normal and EOC cells.

Material and Methods

Cell Lines

Ovarian cancer cells SKOV-3 (ATCC), A2780 (Sigma Aldrich, St Louis, Missouri), and TOV112D (a kind gift from Gen Sheng Wu at Wayne State University, Detroit, Michigan) and normal cells human macrophages (EL-1; ATCC, Manassas, Virginia), human primary normal ovarian epithelial cells (Cell Biologics, Chicago, Illinois), human ovarian epithelial cells (HOSEpiC; ScienCell Research Laboratories, Inc, Carlsbad, California), and immortalized human fallopian tube secretory epithelial cells (FT33; Applied Biological Materials, Richmond, British Columbia, Canada) were used. All cells were grown in media and conditions following manufacturer's protocol. EL-1 cells were grown in IMDM media (ATCC) supplemented with 0.1 mM hypoxanthine and 0.1 mM thymidine solution (H-T, ATCC) and 0.05 mM β -mercaptoethanol. SKOV-3 EOC cells were grown in HyClone McCoy's 5A medium (Fisher Scientific, Waltham, Massachusetts), A2780 EOC cells were grown in HyClone RPMI-1640 (Fisher Scientific), and both TOV112D EOC cells were grown in MCDB105

(Cell Applications, San Diego, California) and Medium 199 (Fisher Scientific; 1:1). All media were supplemented with fetal bovine serum (Innovative Research, Novi, Michigan) and penicillin/streptomycin (Fisher Scientific), per their manufacturer specifications. Human primary normal ovarian epithelial cells were grown in complete human epithelial cell medium (Cell Biologics).

Treatment of Cells

Talcum baby powder (Johnson & Johnson, New Brunswick, NJ, #30027477, Lot#13717RA) was dissolved in dimethyl sulfoxide (DMSO; Sigma Aldrich) at a concentration of 500 mg in 10 mL and was filtered with a 0.2 μ m syringe filter (Corning). Sterile DMSO was used as a control for all treatments. Cells were seeded in 100-mm cell culture dishes (3×10^6) and were treated 24 hours later with 5, 20, or 100 μ g/mL of talc for 72 hours. Cell pellets were collected for RNA, DNA, and protein extraction. Cell culture media were collected for CA-125 analysis by enzyme-linked immunosorbent assay (ELISA).

Real-Time Reverse Transcription Polymerase Chain Reaction

Total RNA was extracted from all cells using the RNeasy mini kit (Qiagen, Valencia, California). Measurement of the amount of RNA in each sample was performed using a Nanodrop spectrophotometer (Thermo Fisher Scientific, Waltham, Massachusetts). A 20 μ L complementary DNA reaction volume containing 0.5 μ g RNA was prepared using the SuperScript VILO Master Mix Kit (Life Technologies, Carlsbad, California). Optimal oligonucleotide primer pairs were selected for each target using Beacon designer (Premier Biosoft, Inc; Table 1). Quantitative reverse transcription polymerase chain reaction (RT-PCR) was performed using the EXPRESS SYBR GreenER qPCR supermix kit (Life Technologies) and the Cepheid 1.2f detection system (Sunnyvale, CA) previously described.⁶ Standards with known concentrations and lengths were designed specifically for β -actin (79 bp), CAT (105 bp), NOS2 (89 bp), GSR (103 bp), GPX1 (100 bp), MPO (79 bp), and SOD3 (84 bp), allowing for construction of a standard curve using a 10-fold dilution series.⁶ All samples were normalized to β -actin. A final melting curve analysis was performed to demonstrate specificity of the PCR product.

Protein Detection

Cell pellets were lysed utilizing cell lysis buffer (20 mM Tris-HCl [pH 7.5], 150 mM NaCl, 1 mM Na₂EDTA, 1 mM EGTA, 1% Triton, 2.5 sodium pyrophosphate, 1 mM β -glycerophosphate, 1 mM Na₃VO₄, 1 μ g/mL leupeptin) containing a cocktail of protease inhibitors. Samples were centrifuged at 13 000 rpm for 10 minutes at 4°C. Total protein concentration of cell lysates from control and talc-treated cells was measured with the Pierce BCA protein assay kit (Thermo Scientific, Rockford, Illinois).

Table 1. Real-Time RT-PCR Oligonucleotide Primers.

Accession Number	Gene	Sense (5'-3')	Antisense (3'-5')	Amplicon (bp)	Annealing Time (seconds) and Temperature (°C)
NM_001101	<i>β-actin</i>	ATGACTTAGTTGCGTTACAC	AATAAAGCCATGCCAATCTC	79	10, 64
NM_001752	<i>CAT</i>	GGTTGAACAGATAGCCTTC	CGGTGAGTGTGAGGATAG	105	10, 63
NM_003102	<i>SOD3</i>	GTGTTCCCTGCCTGCTCCT	TCCGCCGAGTCAGAGTTG	84	60, 64
NM_000637	<i>GSR</i>	TCACCAAGTCCCATATAGAAATC	TGTGGCGATCAGGATGTG	116	10, 63
NM_000581	<i>GPX1</i>	GGACTACACCCAGATGAAC	GAGCCCTTGCGAGGTGTAG	91	10, 66
NM_000625	<i>NOS2</i>	GAGGACCACATCTACCAAGGAGGAG	CCAGGCAGGCGGAATAGG	89	30, 59
NM_000250	<i>MPO</i>	CACTTGTATCCTCTGGTTCTTCAT	TCTATATGCTTCTCACGCCTAGTA	79	60, 63

Abbreviation: RT-PCR, reverse transcription polymerase chain reaction.

Detection of Protein/Activity by ELISA

The following ELISA kits were used (Cayman Chemical, Ann Arbor, Michigan): CAT, SOD, GSR, GPX, and MPO. Nitrite (NO_2^-)/nitrate (NO_3^-) were determined spectrophotometrically by Griess assay as previously reported.⁶ CA-125 protein levels were measured in cell media by ELISA (Ray Biotech, Norcross, Georgia).

TaqMan SNP Genotyping Assay

DNA was isolated utilizing the EZ1 DNA tissue kit (Qiagen) for EOC cells. The TaqMan SNP genotyping assay set (Applied Biosystems, Carlsbad, California; NCBI dbSNP genome build 37, MAF source 1000 genomes) was used to genotype the SNPs (Table 1). The Applied Genomics Technology Center (AGTC, Wayne State University) performed these assays. Analysis was done utilizing the QuantStudio 12 K Flex real-time PCR system (Applied Biosystems).

Cell Proliferation and Apoptosis

Cell proliferation was assessed with the TACS MTT cell proliferation assay (Trevigen, Gaithersburg, Maryland) after treatment with talc (100 $\mu\text{g/mL}$) for 24 hours. The Caspase-3 Colorimetric Activity Assay Kit (Chemicon, Temecula, California) was used to determine levels of caspase-3 activity after treatment of normal and EOC cells with various doses of talc as previously described.⁶ Equal concentrations of cell lysate were used. The assay is based on spectrophotometric detection of the chromophore p-nitroaniline (pNA) after cleavage from the labeled substrate DEVD-pNA. The free pNA can be quantified using a spectrophotometer or a microtiter plate reader at 405 nm. Comparison of the absorbance of pNA from an apoptotic sample with its control allows determination of the percentage increase in caspase-3 activity.

Statistical Analysis

Normality was examined using the Kolmogorov-Smirnov test and by visual inspection of quantile-quantile plots. Because most of the data were not normally distributed, differences in distributions were examined using the Kruskal-Wallis test.

Generalized linear models were fit to examine pairwise differences in estimated least squares mean expression values by exposure to 0, 5, 20, or 100 $\mu\text{g/mL}$ of talc. We used the Tukey-Kramer adjustment for multiple comparisons, and the regression models were fit using log2 transformed analyte expression values after adding a numeric constant “1” to meet model assumptions while avoiding negative transformed values. *P* values below .05 are statistically significant.

Results

Talc Treatment Decreased the Expression of Antioxidant Enzymes SOD and CAT in Normal and EOC Cells

Real-time RT-PCR and ELISA assays were utilized to determine the CAT and SOD messenger RNA (mRNA) and protein levels in cells before and after 72 hours talc treatment, respectively (Figure 1). The CAT (Figure 1A and C) and SOD (Figure 1B and D) mRNA and protein levels were significantly decreased in a dose-dependent manner in talc-treated cells compared to controls ($P < .05$).

Talc Treatment Increased the Expression of Prooxidants iNOS, $\text{NO}_2^-/\text{NO}_3^-$, and MPO in Normal and EOC Cells

Real-time RT-PCR and $\text{NO}_2^-/\text{NO}_3^-$ assays were utilized to determine the iNOS mRNA and NO levels in cells before and after 72 hours talc treatment, respectively (Figure 2). The iNOS mRNA and NO levels were significantly increased in a dose-dependent manner in talc-treated cells as compared to their controls (Figure 2A and C, $P < .05$). As expected, there was no detectable MPO in normal ovarian and fallopian tube cells, and thus, talc treatment did not have any effect. However, MPO mRNA and protein levels were significantly increased in a dose-dependent manner in talc-treated ovarian cancer cells and macrophages compared to controls (Figure 2B and D, $P < .05$).

Talc Treatment Decreased the Expression of Antioxidant Enzymes, GPX and GSR, in Normal and EOC Cells

Real-time RT-PCR and ELISA assays were utilized to determine the GPX and GSR mRNA and protein levels in cells before and

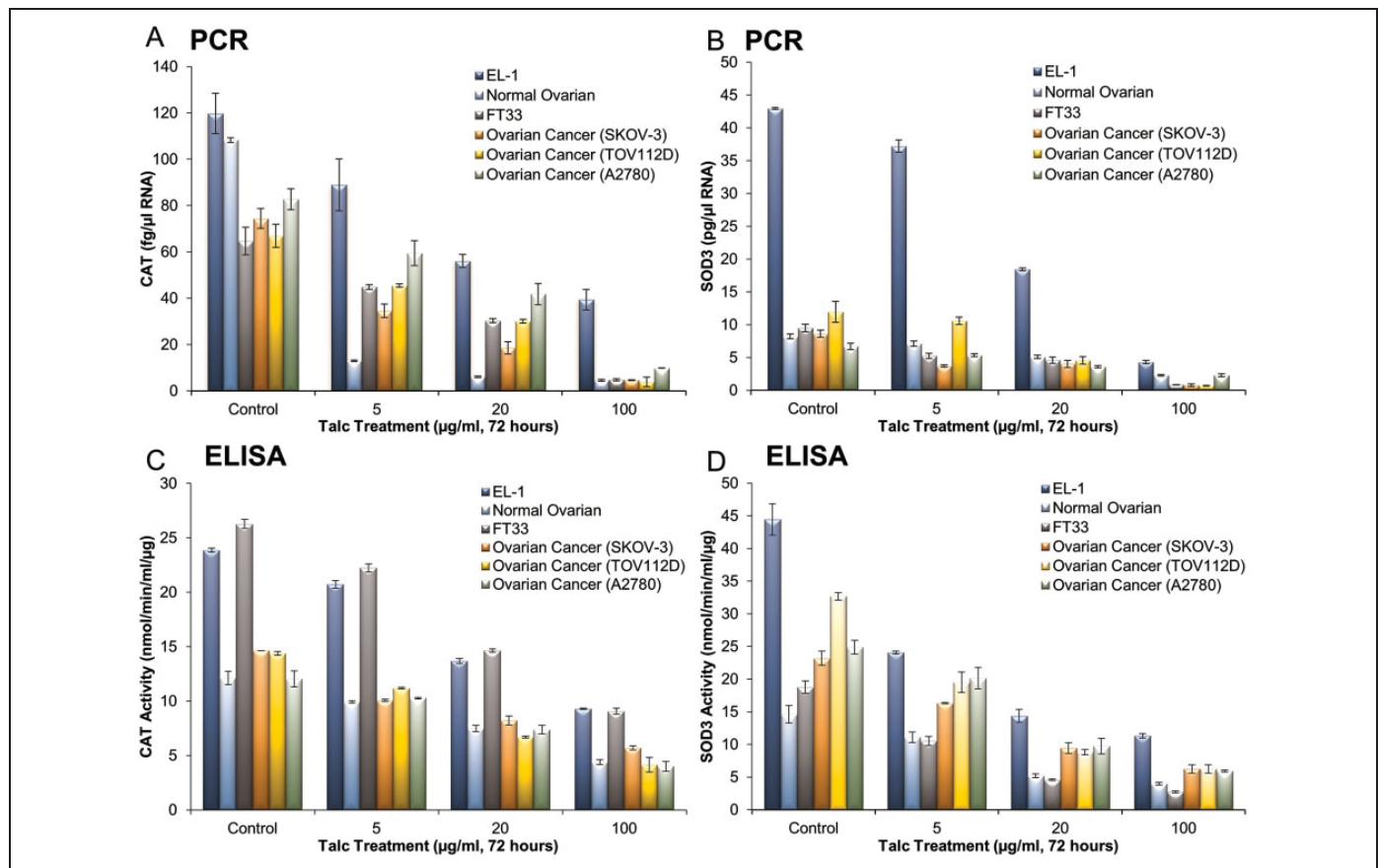


Figure 1. Decreased expression and activity of key antioxidant enzymes, CAT and SOD3. The mRNA (real-time RT-PCR) and protein/activity levels (ELISA) of CAT (A and C) and SOD3 (B and D) were determined in macrophages (EL-1), human primary ovarian epithelial cells (normal ovarian), fallopian tube (FT33), and ovarian cancer (SKOV-3, TOV112D, and A2780) cell lines before and after treatment with various doses of talc over 72 hours. Experiments were performed in triplicate. Expression is depicted as the mean, with error bars representing standard deviation. All changes in response to talc treatment were significant ($P < .05$) in all cells and in all doses as compared to controls. CAT indicates catalase; SOD3, superoxide dismutase 3; mRNA, messenger RNA; RT-PCR, reverse transcription polymerase chain reaction; ELISA, enzyme-linked immunosorbent assay.

after 72 hours of talc treatment, respectively (Figure 3). The GPX (Figure 3A and C) and GSR (Figure 3B and D) mRNA and protein levels were significantly decreased in a dose-dependent manner in talc-treated cells compared to controls ($P < .05$).

Talc Exposure Induced Known Genotype Switches in Key Oxidant and Antioxidant Enzymes

Talc treatment was associated with a genotype switch in *NOS2* from the common C/C genotype in untreated cells to T/T, the SNP genotype, in talc-treated cells, except in A2780 and TOV112D (Table 2). Additionally, the observed decrease in CAT expression and activity was associated with a genotype switch from common C/C genotype in CAT in untreated cells to C/T, the SNP genotype, in TOV112D and all normal talc-treated cells. However, there was no detectable genotype switch in CAT in A2780, SKOV3, and TOV112D (Table 2). Remarkably, there was no observed genotype switch in the selected SNP for SOD3 and GSR in all talc-treated cells. All cells, except for HOSEpiC cells, manifest the SNP genotype of

GPX1 (C/T). Intriguingly, talc treatment reversed this SNP genotype to the normal genotype (Table 2).

Talc Treatment Increased CA-125 Levels in Normal and EOC Cells

CA-125 ELISA assay was performed in protein isolated from cell media before and after talc treatment. CA-125 levels were significantly increased in a dose-dependent manner in all cells (Figure 4, $P < .05$). There was no detectable CA-125 protein in macrophages.

Talc Treatment Increased Cell Proliferation and Decreased Apoptosis

MTT cell proliferation assay was used to determine cell viability, and caspase-3 activity assay was utilized to determine apoptosis of all cell lines after 24 hours of talc treatment (Figure 5). Cell proliferation was significantly increased from the baseline in all talc-treated cells ($P < .05$), but to a greater degree in normal

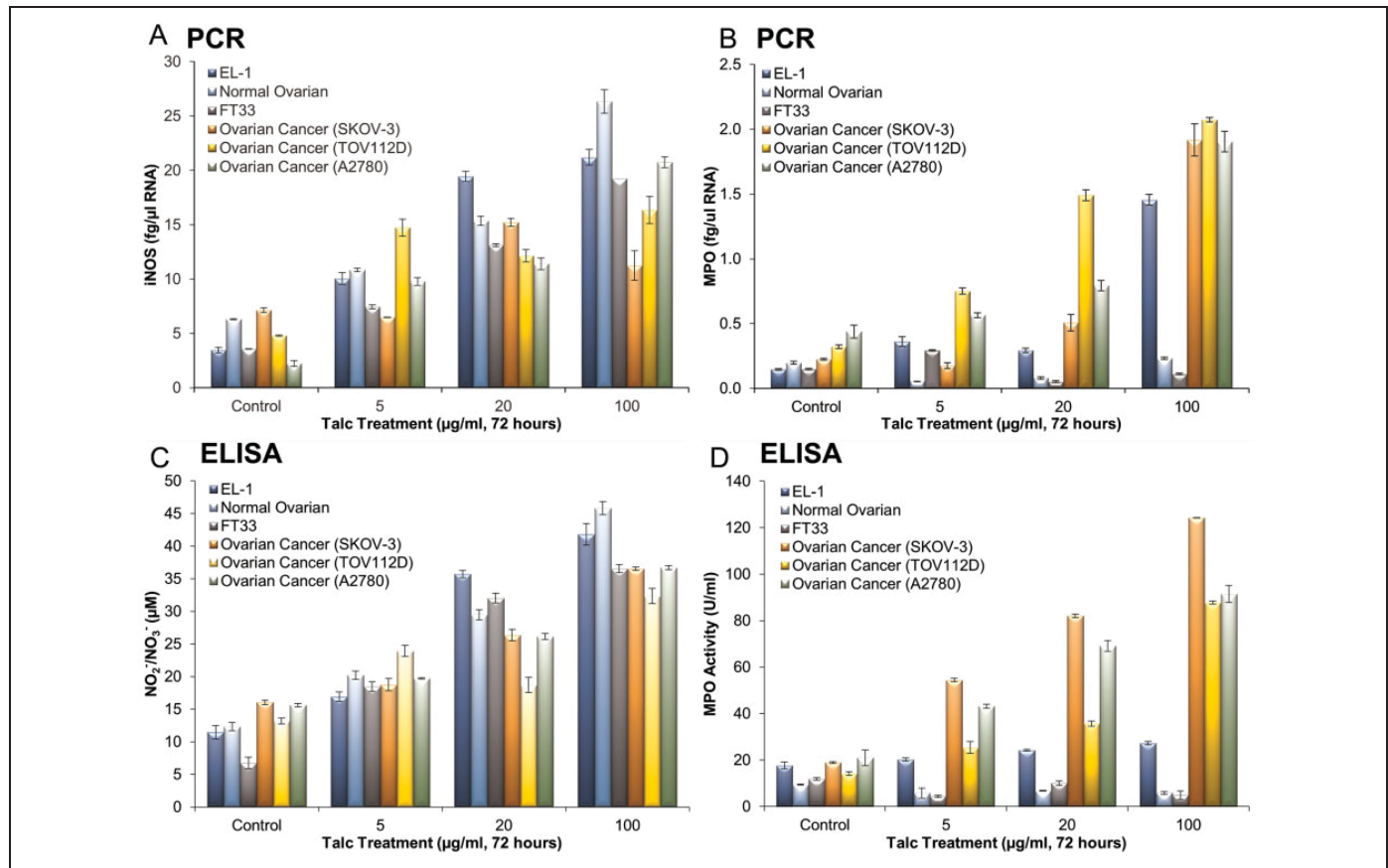


Figure 2. Increased expression and activity of key prooxidants, iNOS, $\text{NO}_2^-/\text{NO}_3^-$, and MPO. The mRNA (real-time RT-PCR) and protein/activity levels (ELISA) of iNOS (A and C) and MPO (B and D) were determined in macrophages (EL-1), human primary ovarian epithelial cells (normal ovarian), fallopian tube (FT33), and ovarian cancer (SKOV-3, TOV112D, and A2780) cell lines before and after treatment with various doses of talc over 72 hours. As expected, there was no detectable MPO in normal ovarian and fallopian tube cells, and thus, talc treatment did not have any effect. Experiments were performed in triplicate. Expression is depicted as the mean, with error bars representing standard deviation. All changes in response to talc treatment were significant ($P < .05$) in iNOS and MPO-positive cells and in all doses as compared to controls. iNOS indicates inducible nitric oxide synthase; MPO, myeloperoxidase; mRNA, messenger RNA; RT-PCR, reverse transcription polymerase chain reaction; ELISA, enzyme-linked immunosorbent assay.

as compared to cancer cells. As anticipated, caspase-3 was significantly reduced in cancer as compared to normal cells. Talc treatment resulted in decreased caspase-3 activity in all cells as compared to controls (Figure 6, $P < .05$), indicating a decrease in apoptosis.

Discussion

The claim that regular use of talcum powder for hygiene purpose is associated with an increased risk of ovarian cancer is based on several reports confirming the presence of talc particles in the ovaries and other parts of the female reproductive tract as well as in lymphatic vessels and tissues of the pelvis.⁷⁻¹² The ability of talc particles to migrate through the genital tract to the distal fallopian tube and ovaries is well accepted.¹⁰ To date, the exact mechanism is not fully understood, though several studies have pointed toward the peristaltic pump feature of the uterus and fallopian tubes, which is known to enhance transport of sperm into the oviduct ipsilateral to the ovary bearing the dominant follicle.⁸⁻¹²

There are reports supporting the epidemiologic association of talc use and risk of ovarian cancer.^{11,12} Recent studies have shown that risks for EOC from genital talc use vary by histologic subtype, menopausal status at diagnosis, hormone therapy use, weight, and smoking. These observations suggest that estrogen and/or prolactin may play a role via macrophage activity and inflammatory response to talc. There has been debate as to the significance of the epidemiologic studies based on the fact that the reported epidemiologic risk of talc use and risk of ovarian cancer, although consistent, are relatively modest (30%-40%), and there is inconsistent increase in risk with duration of use. This observation is due, in part, to the challenges in quantifying exposure as well as the failure of epidemiological studies to obtain necessary information about the frequency and duration of usage.¹¹⁻¹³

In this study, we have shown beyond doubt that talc alters key redox and inflammatory markers, enhances cell proliferation, and inhibits apoptosis, which are hallmarks of ovarian cancer. More importantly, this effect is also manifested by talc in normal cells, including surface ovarian epithelium,

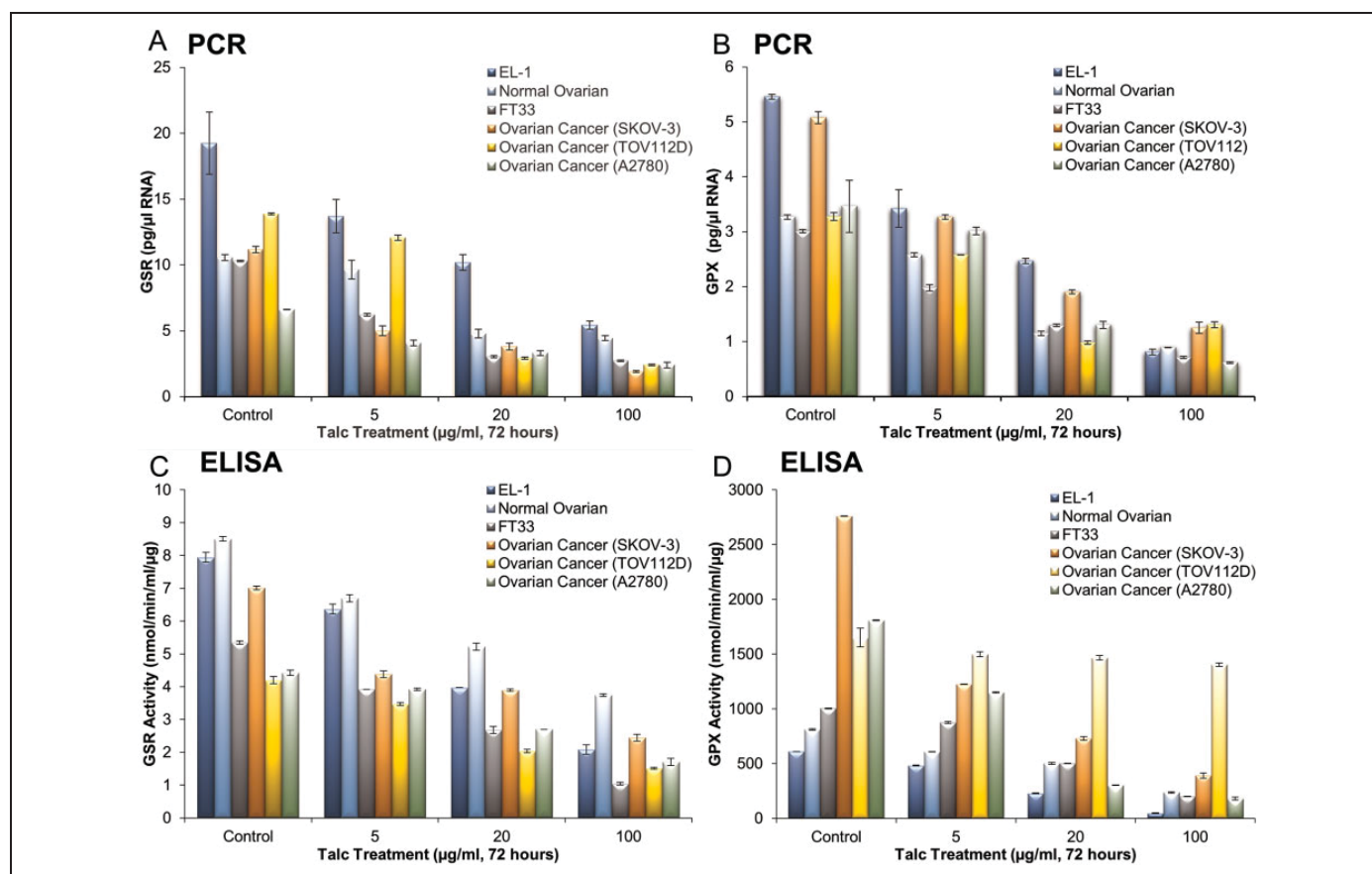


Figure 3. Decreased expression and activity of key antioxidant enzymes, GSR and GPX. The mRNA (real-time RT-PCR) and protein/activity levels (ELISA) of GSR (A and C) and GPX (B and D) were determined in macrophages (EL-1), human primary ovarian epithelial cells (normal ovarian), fallopian tube (FT33), and ovarian cancer (SKOV-3, TOV112D, and A2780) cell lines before and after treatment with various doses of talc over 72 hours. Experiments were performed in triplicate. Expression is depicted as the mean, with error bars representing standard deviation. All changes in response to talc treatment were significant ($P < .05$) in all cells and in all doses as compared to controls. GSR indicates glutathione reductase; GPX, glutathione peroxidase; mRNA, messenger RNA; RT-PCR, reverse transcription polymerase chain reaction; ELISA, enzyme-linked immunosorbent assay.

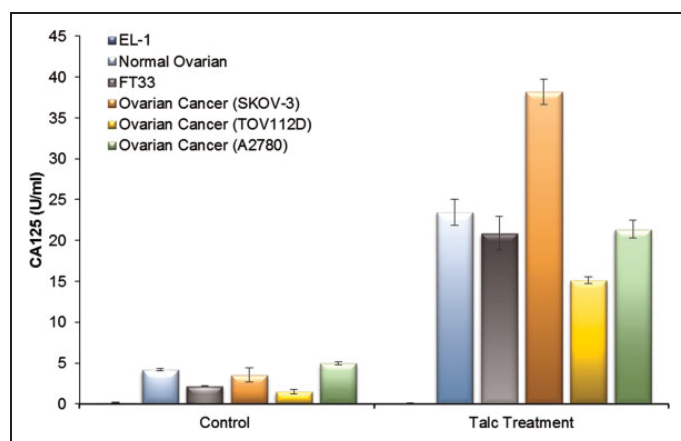
fallopian tube, and macrophages. Oxidative stress has been implicated in the pathogenesis of ovarian cancer, specifically by increased expression of several key prooxidant enzymes such as iNOS, MPO, and NAD(P)H oxidase in EOC tissues and cells as compared to normal cells indicating an enhanced redox state, as we have recently demonstrated (Figure 7).⁶ This redox state is further enhanced in chemoresistant EOC cells as evident by a further increase in iNOS and $\text{NO}_2^-/\text{NO}_3^-$ and a decrease in GSR levels, suggesting a shift toward a prooxidant state.⁶ Antioxidant enzymes, key regulators of cellular redox balance, are differentially expressed in various cancers, including ovarian.^{6,14} Specifically, GPX expression is reduced in prostate, bladder, kidney, and estrogen receptor negative breast cancer cell lines, though GPX is increased in other cancerous tissues from breast.¹⁴ Glutathione reductase levels, on the other hand, are elevated in lung cancer, although differentially expressed in breast and kidney cancer.^{5,15} Similarly, CAT was decreased in breast, bladder, and lung cancer while increased in brain cancer.¹⁶⁻¹⁸ Superoxide dismutase is expressed in lung, colorectal, gastric ovarian, and breast

cancer, while decreased activity and expression have been reported in colorectal carcinomas and pancreatic cancer cells.¹⁸⁻²¹ Collectively, this differential expression of antioxidants demonstrates the unique and complex redox microenvironment in cancer. Glutathione reductase is a flavoprotein that catalyzes the NADPH-dependent reduction of oxidized glutathione (GSSG) to GSH. This enzyme is essential for the GSH redox cycle that maintains adequate levels of reduced cellular GSH. A high GSH to GSSG ratio is essential for protection against oxidative stress (Figure 5). Treatment with talc significantly reduced GSR in normal and cancer cells, altering the redox balance (Figure 3A and C). Likewise, GPX is an enzyme that detoxifies reactive electrophilic intermediates and thus plays an important role in protecting cells from cytotoxic and carcinogenic agents. Overexpression of GPX is triggered by exogenous chemical agents and reactive oxygen species and is thus thought to represent an adaptive response to stress.¹⁵ Indeed, treatment of normal and cancer cells with talc significantly reduced GPX, which compromised the overall cell response to stress (Figure 3B and D).

Table 2. SNP Characteristics (A) and SNP Genotyping of Key Redox Enzymes in Untreated and Talc-Treated (100 µg/mL) Human Primary Ovarian Epithelial Cells (Normal Ovarian), Human Ovarian Surface Epithelial Cells (HOSEpiC), Fallopian Tube (FT33), and Ovarian Cancer (A2780, SKOV-3, TOV112D) Cell Lines (B).

	Gene (rs Number)				
	CAT (rs769217)	NOS ₂ (rs2297518)	GSR (rs8190955)	GPX1 (rs3448)	SOD3 (rs2536512)
A					
MAF	0.123	0.173	0.191	0.176	0.476
SNP	C-262T	C2087T	G201T	C-1040T	A377T
Chromosome location	11p13	17q11.2	8p12	3q21.31	4p15.2
Amino acid switch	Isoleucine to Threonine	Serine to Leucine	Unknown	Unknown	Alanine to threonine
Effect on activity	Decrease	Increase	Unknown	Unknown	Decrease
B					
A2780: Control	C/C	C/C	G/G	C/T	A/A
A2780: Talc	C/C	C/C	G/G	C/C	A/A
SKOV-3: Control	C/C	C/C	G/G	C/T	A/A
SKOV-3: Talc	C/C	T/T	G/G	C/C	A/A
TOV112D: Control	C/C	C/C	G/G	C/T	A/A
TOV112D: Talc	C/T	C/C	G/G	C/C	A/A
HOSEpiC: Control	C/C	C/C	G/G	C/T	A/A
HOSEpiC: Talc	C/T	T/T	G/G	C/T	A/A
FT33: Control	C/C	C/C	G/G	C/T	A/A
FT33: Talc	C/T	T/T	G/G	C/C	A/A
Normal ovarian: Control	C/C	C/C	G/G	C/T	A/A
Normal ovarian: Talc	C/T	T/T	G/G	C/C	A/A

Abbreviation: SNP, single-nucleotide polymorphism.

**Figure 4.** Increased CA-125 levels in response to talc treatment. The level of ovarian cancer biomarker CA-125 was determined by ELISA before and after 72 hours of talc treatment (100 µg/mL) in macrophages (EL-1), human primary ovarian epithelial cells (normal ovarian), fallopian tube (FT33), and ovarian cancer (SKOV-3, TOV112D, and A2780) cells. Experiments were performed in triplicate. Expression is depicted as the mean, with error bars representing standard deviation. All changes in response to talc treatment were significant ($P < .05$) in all cells as compared to controls. ELISA indicates enzyme-linked immunosorbent assay.

We have previously reported that EOC cells manifest increased cell proliferations and decreased apoptosis.⁶ In this study, we have shown that talc enhances cell proliferation and induces an inhibition in apoptosis in EOC cells, but more importantly in normal cells, suggesting talc is a stimulus to the development of the oncogenic phenotype. We also previously

reported a cross talk between iNOS and MPO in ovarian cancer, which contributed to the lower apoptosis observed in ovarian cancer cells.^{6,22} Myeloperoxidase, an abundant hemoprotein, previously known to be present solely in neutrophils and monocytes, is a key oxidant enzyme that utilizes NO produced by iNOS as a 1-electron substrate generating NO⁺, a labile nitrosylating species.^{6,23,24} We were the first to report that MPO was expressed by EOC cells and tissues and that silencing MPO gene expression utilizing MPO-specific siRNA induced apoptosis in EOC cells through a mechanism that involved the S-nitrosylation of caspase-3 by MPO.²² Additionally, we have compelling evidence that MPO serves as a source of free iron under oxidative stress, where both NO⁺ and superoxide are elevated.⁶ Iron reacts with hydrogen peroxide (H₂O₂) and catalyzes the generation of highly reactive hydroxy radical (HO•), thereby increasing oxidative stress, which in turn increases free iron concentrations by the Fenton and Haber-Weiss reaction.^{6,24} We have previously highlighted the potential benefits of the combination of serum MPO and free iron as biomarkers for early detection and prognosis of ovarian cancer.²⁵ Collectively, we now have substantial evidence demonstrating that altered oxidative stress may play a role in maintaining the oncogenic phenotype of EOC cells. Treatment of normal or ovarian cancer cells with talc resulted in a significant increase in MPO and iNOS, supporting the role of talc in the enhancement of a prooxidant state that is a major cause in the development and maintenance of the oncogenic phenotype (Figure 2).

Furthermore, CA-125, which exists as a membrane-bound and secreted protein in EOC cells, has been established as a

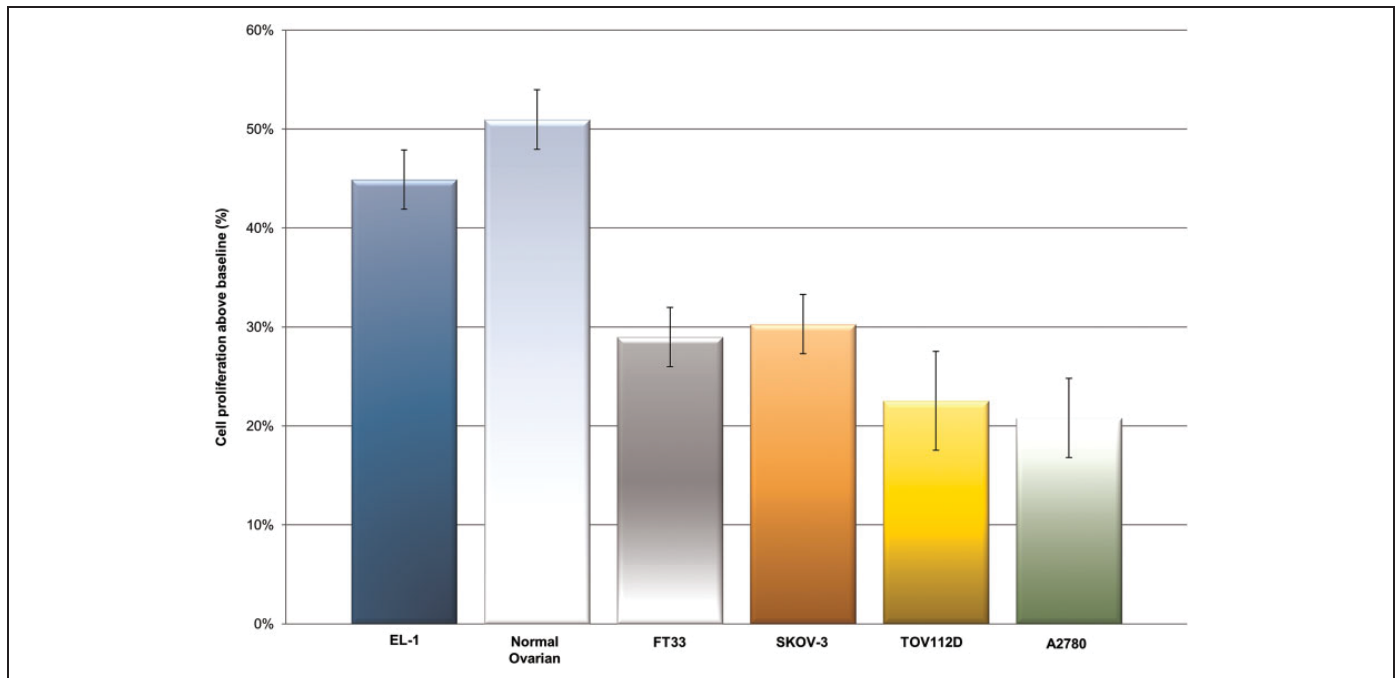


Figure 5. Increased cell proliferation in response to talc treatment. Cell proliferation was determined by MTT cell proliferation assay after 24 hours of talc treatment (100 µg/mL) in macrophages (EL-1), human primary ovarian epithelial cells (normal ovarian), fallopian tube (FT33), and ovarian cancer (SKOV-3, TOV112D, and A2780) cells. Experiments were performed in triplicate. Cell proliferation is depicted as the mean, with error bars representing standard deviation. All changes in response to talc treatment were significant ($P < .05$) in all cells as compared to controls.

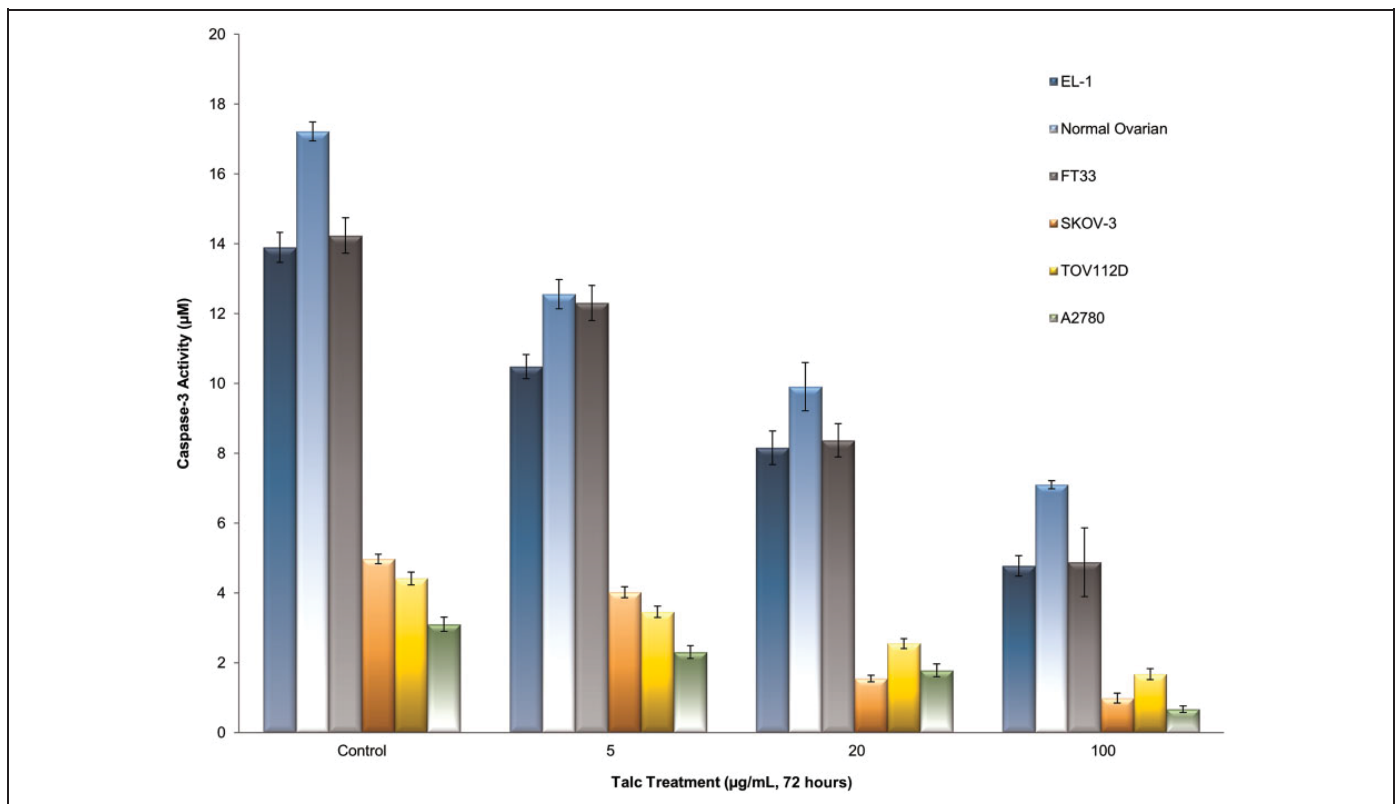


Figure 6. Decreased apoptosis in response to talc treatment. Caspase-3 activity was used to measure the degree of apoptosis in all cells. Caspase-3 activity assay was utilized to determine caspase-3 activity in macrophages (EL-1), human primary ovarian epithelial cells (normal ovarian), fallopian tube (FT33), and ovarian cancer (SKOV-3, TOV112D, and A2780) cell lines before and after treatment with various doses of talc over 72 hours. Experiments were performed in triplicate. Expression is depicted as the mean, with error bars representing standard error. All changes in response to talc treatment were significant ($P < .05$) in all cells and in all doses as compared to controls.

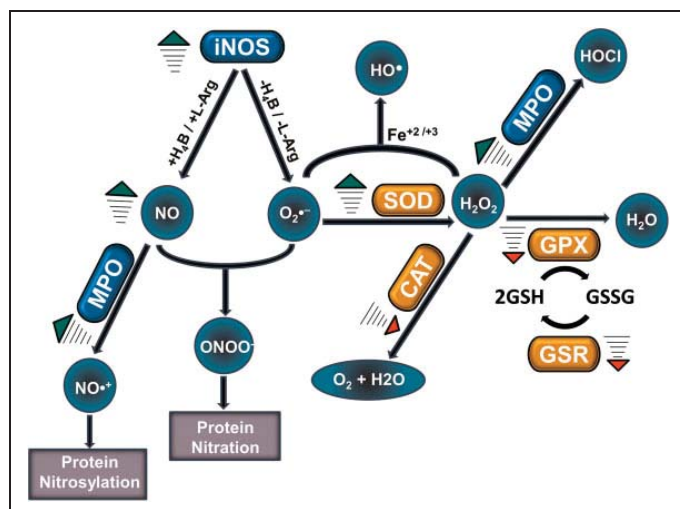


Figure 7. Epithelial ovarian cancer (EOC) cells have been reported to manifest a persistent prooxidant state as evident by the upregulation (green arrows) of key oxidants iNOS, NO, NO⁺, ONOO⁻, OH⁻, O₂⁻, and MPO (blue) and downregulation (red arrows) of key antioxidants SOD, CAT, GPX, and GSR (orange). This redox state was also shown to be further enhanced in chemoresistant EOC cells. In this study, talcum powder altered the redox state, as indicated by the arrows, of both normal and EOC cells to create an enhanced prooxidant state. iNOS indicates inducible nitric oxide synthase; MPO, myeloperoxidase; SOD, superoxide dismutase; CAT, catalase; GPX, glutathione peroxidase; GSR, glutathione reductase.

biomarker for disease progression and response to treatment.² CA-125 expression was significantly increased from nearly undetectable levels in controls to values approaching clinical significance (35 U/mL in postmenopausal women²⁶) in talc-treated cells (Figure 4, $P < .05$) without the physiologic effects on the tumor microenvironment one would expect to be present in the human body, thus highlighting the implications of the prooxidant states caused by talc alone.

To elucidate the mechanism by which talc alters the redox balance to favor a prooxidant state not only in ovarian cancer cells, but more importantly in normal cells, we have examined selected known gene mutations corresponding to SNPs known to be associated with altered enzymatic activity and increased cancer risk.^{6,27} Our results show that the *CAT* SNP (rs769217) resulting in decreased enzymatic activity was induced in all normal cell lines tested and in TOV112D EOC lines, but was not detected in A2780 or SKOV-3 cell lines (Table 2). Nevertheless, our results confirm a decrease in *CAT* expression and enzymatic activity in all talc-treated cells (Figure 1), indicating the existence of other *CAT* SNPs. The *SOD3* (rs2536512) and *GSR* (rs8190955) SNP genotypes were not detected in any cell line, yet *SOD3* and *GSR* activity and expression were decreased in all talc-treated cells, again suggesting the presence of other SNPs. Our results have also shown that all cells, except for HOSEpiC cells, manifest the SNP genotype of *GPX1* (C/T) before talc treatment. Intriguingly, talc treatment reversed this SNP genotype to the normal genotype (Table 2). Consistent with this finding, we have previously reported that acquisition

of chemoresistance by ovarian cancer cells is associated with a switch from the *GPX1* SNP genotype to the normal *GPX1* genotype.⁶ It is not understood why a *GPX1* SNP genotype predominates in untreated normal and ovarian cancer cells. Our results showed that talc treatment was associated with a genotype switch from common C/C genotype in *NOS2* in untreated cells to T/T, the SNP genotype, in talc-treated cells, except in A2780 and TOV112D (Table 2). Nevertheless, our results confirm an increase in iNOS expression and enzymatic activity in all talc-treated cells (Figure 2), again suggesting the existence of other *NOS2* SNPs. Collectively, these findings support the notion that talc treatment induced gene point mutations that happen to correspond to SNPs in locations with functional effects, thus altering overall redox balance for the initiation and development of ovarian cancer. Future studies examining such SNPs are important to fully elucidate a genotype switch mechanism induced by talc exposure.

In summary, this is the first study to clearly demonstrate that talc induces inflammation and alters the redox balance favoring a prooxidant state in normal and EOC cells. We have shown a dose-dependent significant increase in key prooxidants, iNOS, NO₂⁻/NO₃⁻, and MPO, and a concomitant decrease in key antioxidant enzymes, CAT, SOD, GPX, and GSR, in all talc-treated cells (both normal and ovarian cancer) compared to their controls. Additionally, there was a significant increase in CA-125 levels in all the talc-treated cells compared to their controls, except in macrophages. The mechanism by which talc alters the cellular redox and inflammatory balance involves the induction of specific mutations in key oxidant and antioxidant enzymes that correlate with alterations in their activities. The fact that these mutations happen to correspond to known SNPs of these enzymes indicate a genetic predisposition to developing ovarian cancer with genital talcum powder use.

Authors' Note

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Declaration of Conflicting Interests

The author(s) declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: Dr. Saed has served as a paid consultant and expert witness in the talcum powder litigation.

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Exhibit D



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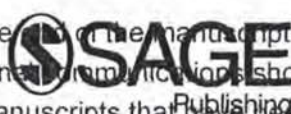
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Exhibit E-1

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON TALCUM

POWDER PRODUCTS MARKETING, SALES

PRACTICES, AND PRODUCTS

LIABILITY LITIGATION

MDL NO: 16-2738(FLW)(LHG)

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THIS DOCUMENT RELATES TO

ALL CASES

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The Videotaped Deposition of GHASSAN SAED, PH.D.,
Taken at 1 Park Avenue,
Detroit, Michigan,
Commencing at 9:15 a.m.,
Wednesday, January 23, 2019,
Before Laurel A. Frogner, RMR, CRR, CSR-2495.

Ghassan Saed, Ph.D.

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<p>1 SAED DEPOSITION EXHIBIT NUMBER 10, INDEX FOR LAB 78</p> <p>2 NOTEBOOK, WAS MARKED BY THE REPORTER FOR</p> <p>3 IDENTIFICATION</p> <p>4</p> <p>5 SAED DEPOSITION EXHIBIT NUMBER 9, PILOT STUDY, 84</p> <p>6 WAS MARKED BY THE REPORTER FOR IDENTIFICATION</p> <p>7</p> <p>8 SAED DEPOSITION EXHIBIT NUMBER 11, NOTEBOOKS, 132</p> <p>9 WAS MARKED BY THE REPORTER FOR IDENTIFICATION</p> <p>10</p> <p>11 SAED DEPOSITION EXHIBIT NUMBER 12, 151</p> <p>12 SAGE PUBLISHING DOCUMENT,</p> <p>13 WAS MARKED BY THE REPORTER FOR IDENTIFICATION</p> <p>14</p> <p>15 SAED DEPOSITION EXHIBIT NUMBER 13, 157</p> <p>16 SAGE PUBLISHING DOCUMENT,</p> <p>17 WAS MARKED BY THE REPORTER FOR IDENTIFICATION</p> <p>18</p> <p>19 SAED DEPOSITION EXHIBIT NUMBER 14, 161</p> <p>20 COPY OF LETTER FROM REPRODUCTIVE SCIENCES,</p> <p>21 WAS MARKED BY THE REPORTER FOR IDENTIFICATION</p> <p>22</p> <p>23 SAED DEPOSITION EXHIBIT NUMBER 15, JANUARY 14, 173</p> <p>24 2019 E-MAIL, WAS MARKED BY THE REPORTER FOR</p> <p>25 IDENTIFICATION</p>	<p>1 Detroit, Michigan</p> <p>2 Wednesday, January 23, 2019</p> <p>3 About 9:15 a.m.</p> <p>4 THE VIDEOGRAPHER: We are now on the record.</p> <p>5 My name is Marc Myers. I'm the videographer for Golkow</p> <p>6 Litigation Services. Today's date is January 23rd,</p> <p>7 2019. The time is now 9:15 a.m. This video deposition</p> <p>8 is being held in Detroit, Michigan in regards to the</p> <p>9 Johnson & Johnson Talcum Powder Products Marketing,</p> <p>10 Sales Practices, and Products Liability Litigation,</p> <p>11 pending in the United States District Court for the</p> <p>12 District of New Jersey.</p> <p>13 The deponent is Dr. Ghassan Saed. And</p> <p>14 counsel will be noted on the stenographic record. And</p> <p>15 will the court reporter please swear in the witness.</p> <p>16 DR. GHASSAN SAED,</p> <p>17 having first been duly sworn, was examined and</p> <p>18 testified on his oath as follows:</p> <p>19 MR. HEGARTY: Before we begin with</p> <p>20 questioning Dr. Saed, I want to make a note on the</p> <p>21 record with regard to materials that were produced to</p> <p>22 us this morning by counsel for Plaintiffs. Those</p> <p>23 materials included the original lab notebook for</p> <p>24 presumably the study that Dr. Saed did that's reported</p> <p>25 in a manuscript that we were provided as well in</p>
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<p>1 SAED DEPOSITION EXHIBIT NUMBER 16, EXPERT REPORT, 175</p> <p>2 WAS MARKED BY THE REPORTER FOR IDENTIFICATION</p> <p>3</p> <p>4 SAED DEPOSITION EXHIBIT NUMBER 17, RESEARCH 214</p> <p>5 ARTICLE, WAS MARKED BY THE REPORTER FOR</p> <p>6 IDENTIFICATION</p> <p>7</p> <p>8 SAED DEPOSITION EXHIBIT NUMBER 18, CURRICULUM 278</p> <p>9 VITAE, WAS MARKED BY THE REPORTER FOR</p> <p>10 IDENTIFICATION</p> <p>11</p> <p>12 SAED DEPOSITION EXHIBIT NUMBER 19, ABSTRACT 315</p> <p>13 SUBMITTED TO SGO, WAS MARKED BY THE REPORTER FOR</p> <p>14 IDENTIFICATION</p> <p>15</p> <p>16 SAED DEPOSITION EXHIBIT NUMBER 20, ABSTRACT, 316</p> <p>17 WAS MARKED BY THE REPORTER FOR IDENTIFICATION</p> <p>18</p> <p>19 SAED DEPOSITION EXHIBIT NUMBER 21, ABSTRACT 317</p> <p>20 FROM SRI, WAS MARKED BY THE REPORTER FOR</p> <p>21 IDENTIFICATION</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 advance, and it's our understanding that we were to</p> <p>2 have copies of the notebook provided to us in advance</p> <p>3 of the deposition. We were provided with what we</p> <p>4 believe to be that notebook that I'm marking as Exhibit</p> <p>5 Number 1.</p> <p>6 SAED DEPOSITION EXHIBIT NUMBER 1,</p> <p>7 COPY OF NOTEBOOK BATES SAED000001 - SAED000097,</p> <p>8 WAS MARKED BY THE REPORTER</p> <p>9 FOR IDENTIFICATION</p> <p>10 MR. HEGARTY: That notebook -- those notebook</p> <p>11 pages begin on Page 30 and go through Page 124 as noted</p> <p>12 in handwriting on the pages. They are Bates Numbered 1</p> <p>13 through 97.</p> <p>14 SAED DEPOSITION EXHIBIT NUMBER 2,</p> <p>15 LAB NOTEBOOK, (Retained by Witness)</p> <p>16 WAS MARKED BY THE REPORTER</p> <p>17 FOR IDENTIFICATION</p> <p>18 MR. HEGARTY: The lab notebook we've been</p> <p>19 provided this morning, which I will designate for</p> <p>20 purposes of the record as Exhibit Number 2, because we</p> <p>21 were told that we were not to mark on it and that Dr.</p> <p>22 Saed would retain it, but the lab notebook provided is</p> <p>23 Exhibit Number 2, includes Pages 1 through 29 which we</p> <p>24 were not provided in advance of the deposition. We</p> <p>25 believe those pages should have been provided along</p>

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<p style="text-align: right;">Page 14</p> <p>1 with the other pages pursuant to Judge Pisano's order 2 and pursuant to our Notice of Deposition. Not having 3 those pages in advance prejudices our right to have a 4 full and complete opportunity to discuss the lab 5 notebook with Dr. Saed during his deposition, and we 6 object to its production here this morning and 7 certainly reserve our right to seek additional time 8 with Dr. Saed as well as any other remedies that we 9 might be entitled to for what we believe to be an 10 untimely production. 11 Also, I will note for purposes of the record 12 that we received this morning as well another lab 13 notebook that is purported to be a notebook covering an 14 additional set of tests that Dr. Saed did with Fisher 15 Scientific Talc, and make note that there's a reference 16 in the manuscript that we were provided testing done on 17 Fisher Scientific talc. We'll designate for purposes 18 of the record this notebook is Exhibit Number 3. 19 SAED DEPOSITION EXHIBIT NUMBER 3, 20 LAB NOTEBOOK, (Retained by Witness) 21 WAS MARKED BY THE REPORTER 22 FOR IDENTIFICATION 23 MR. HEGARTY: This notebook was not provided 24 nor -- in advance of the deposition nor were any pages 25 of this notebook provided in advance of the deposition.</p>	<p style="text-align: right;">Page 16</p> <p>1 excuse me, was not a part of Dr. Saed's manuscript. 2 MR. HEGARTY: I marked it as Exhibit 3, the 3 other lab notebook. 4 MS. O'DELL: I'm referring to Exhibit 2, the 5 initial lab -- 6 MR. HEGARTY: Okay, I'm sorry, I thought you 7 were referring to the second one. 8 MS. O'DELL: I was not. 9 MR. HEGARTY: I'm sorry to interrupt. 10 MS. O'DELL: I'm pretty sure you are not 11 sorry you interrupted me, but Exhibit 2 is the lab 12 notebook I'm referring to, and the study that is the 13 basis of the objection was not a part of the manuscript 14 or the report. 15 Secondly, Exhibit 3 includes a separate and 16 distinct set of data for a Fisher talc study, and we 17 have provided that today, it was published in an 18 abstract and we provided that today in compliance with 19 the second notice of deposition. So the plaintiff's 20 position is we have provided everything the Judge 21 ordered, everything that's required as part of the 22 notice, and we'll oppose any motion to extend the 23 deposition and keep it open. 24 MR. HEGARTY: I do have a question. You're 25 saying that the lab notebook we designated as Exhibit</p>
<p style="text-align: right;">Page 15</p> <p>1 We have not had an opportunity to review it to know 2 whether this is pertinent to the manuscript that we'll 3 talk about here today, but also believe that this is 4 likely to also fall within the scope of Judge Pisano's 5 order and certainly within the scope of the Notice of 6 Deposition that we had made. So we also object to 7 its -- the timeliness of the production of this 8 notebook and, again, we reserve all rights for whatever 9 remedies are appropriate due to this late production. 10 MR. KLATT: Imerys Talc America joins in what 11 Mr. Hegarty said. And can we have the agreement we've 12 had that one objection is good for all? 13 MS. O'DELL: Yes. 14 MR. KLATT: All defendants join. 15 MS. O'DELL: So on behalf of the steering 16 committee, let me state that Judge Pisano's order 17 related to the specific -- a specific Notice of 18 Deposition that requested documents regarding the 19 underlying data and study that was reported in Dr. 20 Saed's manuscript as well as his expert report. That 21 was the subject of the order. Those materials were 22 provided in compliance with Judge Pisano's order. 23 There was a second general notice that asked for other 24 talc studies. The additional talc study that's noted 25 in the lab book Exhibit 2 was not a part of Judge --</p>	<p style="text-align: right;">Page 17</p> <p>1 Number 2 for which you provided copies is not related 2 to the manuscript that's titled Molecular Basis 3 Supporting the Association of Talcum Powder Use With 4 Increased Risk of Ovarian Cancer? 5 MS. O'DELL: That's not what I said. What I 6 said is the portion of the lab notebook Exhibit 2, 7 which you referred to as Pages 1 through 29, are not 8 reported in the manuscript or the report, the expert 9 report in this matter, and, therefore, they were not 10 subject Judge Pisano's previous ruling, so that's the 11 distinction that I'm making. These are materials that 12 were made available to you today and you have full 13 opportunity TO ask Dr. Saed questions about it. 14 MR. HEGARTY: I understand. 15 EXAMINATION BY MR. HEGARTY: 16 Q. Good morning, Dr. Saed. 17 A. Good morning. 18 Q. Would you -- strike that. My name is Mark Hegarty. I 19 represent the Johnson & Johnson defendants in this 20 matter. Would you please state your full name for the 21 record, please. 22 A. Ghassan Saed. 23 Q. Who is your current employer, Dr. Saed? 24 A. Wayne State University Medical School. 25 Q. What is your title?</p>

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<p style="text-align: right;">Page 18</p> <p>1 A. Wayne State University Medical School. 2 Q. What is your title there? 3 A. Associate professor. 4 Q. How long have you held that position? 5 A. Eight years about, I'm not -- 6 Q. Do you also have a separate personal consulting 7 business for purposes of litigation? 8 A. DS Biotech, it's a consulting company. 9 Q. Are there any other employees or owners or other 10 individuals involved in DS Biotech besides you? 11 A. No. 12 Q. Is your son in any way involved in that business? 13 A. Just doing some paperwork. 14 Q. Do you do any business through DS Biotech besides 15 expert witness consulting for litigation? 16 A. We do consulting for scientific testing for 17 universities, for investigators, we design experiments, 18 we help them write manuscripts. 19 Q. You said for other investigators or universities. Do 20 you do any business with any companies? 21 A. I do, yes. 22 Q. Can you name a company with whom you do business? 23 A. Temple Pharmaceuticals. 24 Q. How long has DS Biotech been in business? 25 A. 2006.</p>	<p style="text-align: right;">Page 20</p> <p>1 BY MR. HEGARTY: 2 Q. What portion of the fees have you not been paid -- 3 A. So we -- 4 Q. -- through DS Biotech? 5 A. So we have to deduct expenses and everything. 6 Q. Can you approximate the expenses you have had to deduct 7 from the fees you've -- 8 A. I haven't done it for this year yet. 9 Q. Do you have any other sources of income besides your 10 work at Wayne State and through DS Biotech? 11 A. No. 12 Q. What are you charging Plaintiff's Counsel in this 13 litigation for your work? 14 A. \$600 an hour. 15 Q. Do you have different rates for deposition or trial 16 testimony? 17 A. Do I have different rate? 18 Q. Sure. The rate you just quoted me was per hour, \$600 19 per hour. Do you have a different per-hour rate if 20 you're being deposed or if you're going to trial? 21 A. Oh, no. 22 Q. You have obligations at Wayne State University to 23 disclose financial arrangements -- 24 A. Yes. 25 Q. -- is that correct? Have you disclosed your financial</p>
<p style="text-align: right;">Page 19</p> <p>1 Q. Are you currently named as an expert witness in any 2 other litigation besides this one? 3 A. No. 4 Q. Have the fees that you have generated in connection 5 with your work on this case been directed to DS 6 Biotech? 7 A. Been directed? 8 Q. Well, have the fees that you have generated for your 9 work on this case been paid to DS Biotech? 10 A. Yes. 11 Q. Do you receive all of the income from those fees? 12 A. Through DS Biotech? 13 Q. Yes. 14 A. Yes, after I submit taxes and all that. 15 Q. But you essentially receive the fees even though they 16 were directed to DS Biotech, correct? 17 A. Correct, the company received it, yes. 18 Q. Then you have been -- you were paid by the company, 19 correct? 20 A. Yes. 21 Q. Were you -- have you been paid by the company the same 22 amount to which the fees generated? 23 MS. O'DELL: Object to the form. 24 THE WITNESS: Yeah, I am -- the answer is no. 25</p>	<p style="text-align: right;">Page 21</p> <p>1 arrangement -- 2 A. Yes. 3 Q. -- to Wayne State with regard to your work with 4 Plaintiff's Counsel in this case? 5 A. Yes. 6 Q. When did you make that disclosure? 7 A. Every year they -- there's a deadline to receive -- to 8 submit a form which shows consultation efforts, and for 9 2018 that was submitted 10 days ago. 10 Q. Who did you identify to whom you were consulting with 11 with regard to that disclosure for purposes of this 12 litigation? 13 A. DS Biotech and Beasley Allen. 14 Q. You prepared a report in this case, correct? 15 A. (Nods head.) 16 Q. Yes? 17 A. Did I prepare a report? Yes. 18 Q. Did anyone outside of the lawyers for the plaintiffs in 19 this case assist you in any way with that report? 20 A. No. 21 Q. Do you know how much you have been paid through the 22 present date for your work in this litigation? 23 A. Yes. 24 Q. How much? 25 A. Approximately 260, something like that.</p>

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<p>1 Q. 260,000?</p> <p>2 A. Yes, about that, maybe a little bit less, I don't know,</p> <p>3 I can't remember the exact number.</p> <p>4 SAED DEPOSITION EXHIBIT NUMBER 4,</p> <p>5 INVOICES,</p> <p>6 WAS MARKED BY THE REPORTER</p> <p>7 FOR IDENTIFICATION</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. I'm marking as Exhibit Number 4, Dr. Saed, copies of</p> <p>10 invoices that we were provided in advance of the</p> <p>11 deposition. Would you look at Exhibit Number 4, and</p> <p>12 tell me whether those are copies of all the invoices</p> <p>13 you have generated for purposes of your work in this</p> <p>14 case?</p> <p>15 A. Yeah, they look fine to me.</p> <p>16 Q. The last invoice we were provided is dated November 16,</p> <p>17 2018, that's the issue date. Have you prepared any</p> <p>18 additional invoices since that date?</p> <p>19 A. No.</p> <p>20 Q. Have you spent additional time on this case for which</p> <p>21 you intend to prepare an invoice --</p> <p>22 A. Yes.</p> <p>23 Q. -- since that date?</p> <p>24 A. Yes.</p> <p>25 Q. How much additional time have you spent that you have</p>	<p>1 Beasley Allen?</p> <p>2 A. So I started October, maybe 1st of October, maybe</p> <p>3 before that, I can't remember the exact date.</p> <p>4 Q. What is your best estimate?</p> <p>5 A. I would say end of September.</p> <p>6 Q. So the first invoice -- I'm sorry, go ahead.</p> <p>7 A. Go ahead.</p> <p>8 Q. So the first invoice on Exhibit Number 4 would reflect</p> <p>9 the time you spent from approximately the end of</p> <p>10 September through October 30th, 2017, correct?</p> <p>11 A. Correct.</p> <p>12 Q. Can you describe for me with regard to the first</p> <p>13 invoice the type of work that you did between the</p> <p>14 first -- between the end of September and the date of</p> <p>15 this first invoice?</p> <p>16 A. Sure. So this was time for meetings, meeting with them</p> <p>17 and reviewing literature basically.</p> <p>18 Q. You said meeting with them. Who is "them"?</p> <p>19 A. With Beasley Allen.</p> <p>20 Q. Which attorneys from Beasley Allen did you meet with?</p> <p>21 A. Dr. Thompson, Mrs. --</p> <p>22 MS. O'DELL: O'Dell.</p> <p>23 THE WITNESS: -- O'Dell and Jennifer --</p> <p>24 what's her last name?</p> <p>25</p>
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<p>1 not yet invoiced?</p> <p>2 A. Approximately 100, 110 hours.</p> <p>3 Q. The invoices show that they were issued by DS Biotech,</p> <p>4 that's the company we talked about earlier, is that</p> <p>5 correct?</p> <p>6 A. Yes.</p> <p>7 Q. There are no other employees of DS Biotech besides</p> <p>8 yourself, is that correct?</p> <p>9 A. And help from my son, paperwork part-time.</p> <p>10 Q. Is he a paid employee?</p> <p>11 A. No.</p> <p>12 Q. The first page of Exhibit Number 4 with an issue date</p> <p>13 of the invoice 10-30-2017 includes just a single word</p> <p>14 in the description Consulting with no corresponding</p> <p>15 date. What is the date of the first consulting entry</p> <p>16 that you have listed on the first page of Exhibit</p> <p>17 Number 4?</p> <p>18 A. 10-30, so what's the -- I'm sorry.</p> <p>19 Q. Let me ask, Exhibit Number 4, the first page refers to</p> <p>20 an invoice of \$20,400 at a unit price of \$600, so there</p> <p>21 would be several hours, you spent several hours doing</p> <p>22 something that generated that invoice, correct?</p> <p>23 A. Yes.</p> <p>24 Q. When did that something start? When is the first time</p> <p>25 that you spent anytime on this matter on behalf of</p>	<p>1 BY MR. HEGARTY:</p> <p>2 Q. Do you recall the date of your first contact by Beasley</p> <p>3 Allen?</p> <p>4 A. Around middle of August.</p> <p>5 Q. How was that contact made?</p> <p>6 A. A phone call.</p> <p>7 Q. A phone call to you?</p> <p>8 A. Yes.</p> <p>9 Q. Who called you?</p> <p>10 A. Dr. Thompson.</p> <p>11 Q. Did you know Dr. Thompson before the call?</p> <p>12 A. No.</p> <p>13 Q. Apart from -- or strike that. What did she tell you</p> <p>14 when she first called you?</p> <p>15 A. She told me that they would like to meet with me to</p> <p>16 discuss the possibility of acting as a witness expert</p> <p>17 in ovarian cancer inflammation and oxidative stress.</p> <p>18 Q. Did you agree to serve as a retained expert on behalf</p> <p>19 of Beasley Allen at that first call?</p> <p>20 A. No.</p> <p>21 Q. What else were you told by Miss Thompson during that</p> <p>22 phone call?</p> <p>23 A. We just basically talked about setting a meeting and we</p> <p>24 did.</p> <p>25 Q. You said that she told you that they would like to meet</p>

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<p>1 with you to discuss the possibility of acting as a</p> <p>2 witness, expert witness on cancer inflammation and</p> <p>3 oxidative stress. Was there a reference during that</p> <p>4 call to talc exposure?</p> <p>5 A. No.</p> <p>6 Q. So talc was not brought up --</p> <p>7 A. In the conversation, no.</p> <p>8 Q. -- in the first call. Was the fact that they were</p> <p>9 representing clients or that they were wanting to talk</p> <p>10 to you in connection with a litigation, was that</p> <p>11 discussed?</p> <p>12 A. In the phone call, no.</p> <p>13 Q. Did she identify herself as a lawyer?</p> <p>14 A. Yes, and the firm.</p> <p>15 Q. What was your understanding as far as why a lawyer from</p> <p>16 Beasley Allen would want to talk to you about</p> <p>17 inflammation and oxidative stress?</p> <p>18 A. Because -- so, oh, so you're telling me if she told me</p> <p>19 she is the lawyer on behalf of the defendants, I mean</p> <p>20 the plaintiffs in ovarian cancer cases and talc?</p> <p>21 Q. Yes.</p> <p>22 A. She, yes, she identified herself as such.</p> <p>23 Q. So you understood that the --</p> <p>24 A. Yes.</p> <p>25 Q. -- consulting that you would be doing would be with</p>	<p>1 moment after Mark's question so I can object if I need</p> <p>2 to.</p> <p>3 THE WITNESS: Oh, I'm sorry.</p> <p>4 MS. O'DELL: Thank you.</p> <p>5 THE WITNESS: Where are we now?</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Yes, I said -- my question was what analysis of the</p> <p>8 medical literature had you done with regard to talc and</p> <p>9 ovarian cancer prior to the call from Miss Thompson?</p> <p>10 A. Reading the literature.</p> <p>11 Q. What literature had you read?</p> <p>12 A. I read the epidemiology studies, I read some of the</p> <p>13 molecular studies, I read what's in the news, I read</p> <p>14 everything, I listened to the news, that's my interest,</p> <p>15 it's ovarian cancer and inflammation.</p> <p>16 Q. What epidemiologic studies had you read prior to the</p> <p>17 call from Miss Thompson?</p> <p>18 A. I read -- the exact one?</p> <p>19 Q. Yes.</p> <p>20 A. I can't remember exact one, but I read several studies.</p> <p>21 Q. Can you identify the names of any studies, whether by</p> <p>22 author or study name, that you had read prior to the</p> <p>23 call from Miss Thompson?</p> <p>24 MS. O'DELL: Object and asked and answered.</p> <p>25 THE WITNESS: Yeah. I mean I can look it up</p>
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<p>1 regard to in some way to talc, correct?</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: No. I was asked to serve as a</p> <p>4 witness expert in my specialty, which is what we did</p> <p>5 and what I do for the last 30 years, ovarian cancer,</p> <p>6 oxidative stress, and inflammation.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. As of the time of that phone call, your specialty was</p> <p>9 not talc, correct?</p> <p>10 A. My specialty is anything that induces inflammation and</p> <p>11 oxidative stress that is linked to ovarian cancer.</p> <p>12 Q. But at the time of that first call you had done no</p> <p>13 studies involving talc, correct?</p> <p>14 A. No, no studies, but I was really interested in it</p> <p>15 because of the media reports that's going at the time.</p> <p>16 Q. And at the time of that first call you had done no</p> <p>17 analysis of the medical literature with regard to talc</p> <p>18 and ovarian cancer, correct?</p> <p>19 MS. O'DELL: Objection.</p> <p>20 THE WITNESS: Not correct.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. What analysis of the medical literature had you done</p> <p>23 with regard to talc and ovarian cancer prior to the</p> <p>24 call from Miss Thompson?</p> <p>25 MS. O'DELL: Doctor, if you'll give me just a</p>	<p>1 for you, but the cohort study is what I read, and I</p> <p>2 read some other studies. I can't remember exactly.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. When in relation to the call from Miss Thompson had you</p> <p>5 read the medical literature you just described?</p> <p>6 A. Sorry, I missed that.</p> <p>7 Q. When in relation to the call from Miss Thompson in</p> <p>8 August of 2017 had you read the literature you just</p> <p>9 talked about, the epi studies, the molecular studies?</p> <p>10 A. Yeah, it's over the past year prior.</p> <p>11 Q. What was it that prompted you to review those materials</p> <p>12 in the first place?</p> <p>13 A. The media reports.</p> <p>14 Q. What media reports?</p> <p>15 A. People talking about the risk of ovarian cancer and</p> <p>16 talc powder use, it was all over the place.</p> <p>17 Q. As of the time that Miss Thompson called, you had done</p> <p>18 no studies yourself involving talc, correct?</p> <p>19 A. Lab studies?</p> <p>20 Q. Lab studies.</p> <p>21 A. No.</p> <p>22 Q. You had done no other study besides reading the</p> <p>23 literature, correct?</p> <p>24 MS. O'DELL: Objection to form.</p> <p>25 THE WITNESS: Other studies related to talc?</p>

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<p style="text-align: right;">Page 30</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Correct.</p> <p>3 A. I didn't do any studies related to -- lab studies</p> <p>4 related to talc before that, yes.</p> <p>5 Q. And as of the time that Miss Thompson called you, had</p> <p>6 you formed any opinions with regard to talc and ovarian</p> <p>7 cancer?</p> <p>8 A. Formed an opinion?</p> <p>9 Q. Yes, as to whether there's a causal link between talc</p> <p>10 and ovarian cancer?</p> <p>11 A. It's always my opinion that anything that causes</p> <p>12 inflammation, redox imbalance, is linked to increased</p> <p>13 risk of ovarian cancer. This is the core of my work.</p> <p>14 Q. So it's always been your opinion that anything that</p> <p>15 causes inflammation will cause ovarian cancer?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 You may answer.</p> <p>18 THE WITNESS: No. I said that anything that</p> <p>19 induces inflammation, alter the redox balance is</p> <p>20 potential for increasing risk of ovarian cancer, yes.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. As of the time that Miss Thompson called you, what</p> <p>23 medical studies reported that talc altered the redox</p> <p>24 balance leading to inflammation?</p> <p>25 A. There was one study of Shukla, I think, and they</p>	<p style="text-align: right;">Page 32</p> <p>1 talc and ovarian cancer?</p> <p>2 A. That talc is a potential inducer of inflammation, and</p> <p>3 it induces and increases risk of ovarian cancer.</p> <p>4 Q. Those opinions came from your review -- from the media</p> <p>5 reports and your review of the literature you</p> <p>6 described?</p> <p>7 A. Uh-huh.</p> <p>8 Q. Is that correct?</p> <p>9 A. Correct.</p> <p>10 Q. With regard to the invoices we marked as Exhibit</p> <p>11 Number 4, do these reflect only your time spent in this</p> <p>12 case?</p> <p>13 A. Correct.</p> <p>14 Q. Are you able to break down from these invoices the</p> <p>15 amount of hours you spent reviewing literature?</p> <p>16 A. From the first one?</p> <p>17 Q. From the first one through the end.</p> <p>18 A. The answer is no, because I always review literature,</p> <p>19 this is my job, that's what I do for a living, I review</p> <p>20 literature every single day.</p> <p>21 Q. After being contacted by Miss Thompson, did you review</p> <p>22 literature with regard to this subject area, talc and</p> <p>23 ovarian cancer, that you had not reviewed before?</p> <p>24 A. Yes.</p> <p>25 Q. Are you able to break down from these invoices the</p>
<p style="text-align: right;">Page 31</p> <p>1 measured the effect of -- they measured the reactive</p> <p>2 oxygen species especially dihydrogen peroxide H2O2, and</p> <p>3 they found a dose response effect when exposure to</p> <p>4 talc.</p> <p>5 Q. From that one study you came to the opinion that --</p> <p>6 A. No.</p> <p>7 Q. -- talc use causes redox imbalance that leads to</p> <p>8 inflammation that leads to ovarian cancer?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: No. What I said that my</p> <p>11 interest is inflammation and redox balance and</p> <p>12 imbalance and reactive oxygen species, so anything that</p> <p>13 able at the cellular level to alter this, manipulate</p> <p>14 this, is a candidate, is a potential risk to ovarian</p> <p>15 cancer.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. As of the time that Miss Thompson called you, had you</p> <p>18 come to the opinion that talc used by women did alter</p> <p>19 the redox balance?</p> <p>20 MS. O'DELL: Objection, asked and answered.</p> <p>21 You may answer.</p> <p>22 THE WITNESS: Repeat the question, please.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Sure. As of the time that you received the call from</p> <p>25 Miss Thompson, what opinion did you have with regard to</p>	<p style="text-align: right;">Page 33</p> <p>1 amount of time you spent writing your expert report?</p> <p>2 A. There is actually one that actually state -- no, no,</p> <p>3 where is it? I thought there was one saying expert</p> <p>4 report. I can identify it, yes.</p> <p>5 Q. You can't identify it?</p> <p>6 A. I can, just give me one second. Yes, it's this one.</p> <p>7 Q. The very last one?</p> <p>8 A. Yes.</p> <p>9 Q. Does the very last one represent the amount of time you</p> <p>10 spent writing your report?</p> <p>11 A. Correct.</p> <p>12 Q. Are you able to break down from the invoices the amount</p> <p>13 of time you spent talking with lawyers for Beasley</p> <p>14 Allen?</p> <p>15 A. No.</p> <p>16 Q. You prepared a manuscript which we'll talk about today</p> <p>17 that has been submitted to the Journal for Reproductive</p> <p>18 Sciences entitled Molecular Basis Supporting the</p> <p>19 Association of Talcum Powder Use With Increased Risk of</p> <p>20 Ovarian Cancer. Are you familiar with that?</p> <p>21 A. Yes.</p> <p>22 Q. Did you bill the time you spent preparing that</p> <p>23 manuscript to lawyers for Beasley Allen?</p> <p>24 A. For this one? Yes.</p> <p>25 Q. Is that reflected in these invoices?</p>

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<p style="text-align: right;">Page 34</p> <p>1 A. Yes.</p> <p>2 Q. Are you able to tell me how much time you spent</p> <p>3 preparing that manuscript that's reflected in the</p> <p>4 invoices we marked as Exhibit Number 4?</p> <p>5 A. Exactly, no.</p> <p>6 Q. Can you approximate it in any way?</p> <p>7 A. Yes.</p> <p>8 Q. What's your approximation?</p> <p>9 A. I would say about 60 to 70 hours.</p> <p>10 Q. There are other authors on that paper, correct?</p> <p>11 A. Correct.</p> <p>12 Q. Did you bill their time to Beasley Allen for their work</p> <p>13 on the manuscript?</p> <p>14 A. No.</p> <p>15 Q. How was their time paid for?</p> <p>16 A. So some of them are, if you look at the names, some of</p> <p>17 them are the department chair, Dr. Morris, and this is</p> <p>18 an academic institution, we don't bill for the time of</p> <p>19 consultants or coworkers or co-authors. The research</p> <p>20 technicians was paid from my lab, and Amy Harper is a</p> <p>21 fellow, OB-GYN oncology fellow, and they're paid for</p> <p>22 fellowships through the department, so we don't bill</p> <p>23 for their time.</p> <p>24 Q. I'm marking as Exhibit Number 5 -- I'm sorry, go ahead.</p> <p>25 A. Go ahead.</p>	<p style="text-align: right;">Page 36</p> <p>1 costs for your talc project that she did on</p> <p>2 December 18, 2018?</p> <p>3 A. I always ask for all my projects accounts.</p> <p>4 Q. Where is the documentation or accounting of the time</p> <p>5 you spent, the lab supplies, the equipment, services,</p> <p>6 isn't there a separate list that breaks down the hours</p> <p>7 or the costs for personnel time and lab supplies,</p> <p>8 equipment, services?</p> <p>9 MS. O'DELL: Objection.</p> <p>10 THE WITNESS: Yeah, so the question is these</p> <p>11 numbers came from breakdown of expenses, receipts. We</p> <p>12 do have receipts for all the expenses from the lab.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Do you have receipts for, that document all the time</p> <p>15 that is under the heading personnel?</p> <p>16 A. So the only personnel that's paid was Dr. Fletcher and</p> <p>17 part-time my research assistant, medical student Ira,</p> <p>18 she was paid part-time, but full-time salary was paid</p> <p>19 for Nicole from this budget.</p> <p>20 Q. Who paid --</p> <p>21 A. That's included in what they call indirect.</p> <p>22 Q. Let me finish, Doctor, who paid for Ira and Nicole's</p> <p>23 time?</p> <p>24 A. My lab.</p> <p>25 Q. When you say your lab, you're talking about your lab at</p>
<p style="text-align: right;">Page 35</p> <p>1 Q. You were saying something.</p> <p>2 A. I said the only time billed to this from the manuscript</p> <p>3 is my time.</p> <p>4 Q. I'm marking this as Exhibit Number 5, a copy of another</p> <p>5 document we were provided in advance of the deposition.</p> <p>6 SAED DEPOSITION EXHIBIT NUMBER 5,</p> <p>7 DECEMBER 18, 2018 DOCUMENT,</p> <p>8 WAS MARKED BY THE REPORTER</p> <p>9 FOR IDENTIFICATION</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Can you tell me what Exhibit Number 5 is?</p> <p>12 A. So this is the cost of this project since the beginning</p> <p>13 till now from my lab from my side.</p> <p>14 Q. This listing of costs was sent to you by a Sharon Pepe?</p> <p>15 A. The contract -- the grants and contract manager, yes.</p> <p>16 Q. Who is that?</p> <p>17 A. The financial manager of our department, grants and</p> <p>18 contract.</p> <p>19 Q. How did she come to send you this document on</p> <p>20 December 18, 2018?</p> <p>21 A. How come?</p> <p>22 Q. Yes.</p> <p>23 A. I asked her. Every year they give us a budget balance</p> <p>24 of each account that we have.</p> <p>25 Q. Why did you ask her to send you the accounting of the</p>	<p style="text-align: right;">Page 37</p> <p>1 Wayne State?</p> <p>2 A. Yes.</p> <p>3 Q. And where did the funds come from that your lab could</p> <p>4 use to pay Ira and Nicole?</p> <p>5 A. I have discretion funding for my lab.</p> <p>6 Q. I'm sorry?</p> <p>7 A. I have funds available for me to my lab.</p> <p>8 Q. Who provides those funds?</p> <p>9 A. The department.</p> <p>10 Q. So the department paid for Ira's and Nicole's time to</p> <p>11 work on this talc project?</p> <p>12 A. Correct.</p> <p>13 Q. The total listed there is \$94,957. How much of that</p> <p>14 went to Ira and Nicole?</p> <p>15 A. Most of that went to Nicole, I can't remember exact,</p> <p>16 but most of that went to Nicole because she was a</p> <p>17 full-time post doc at the time.</p> <p>18 Q. Do you know where the department received the funds</p> <p>19 that were used to pay Ira and Nicole?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: I missed that.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Sure. I think you said the department paid for Ira's</p> <p>24 and Nicole's time. From where did the department get</p> <p>25 the funds they used to pay for Ira and Nicole's time?</p>

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<p style="text-align: right;">Page 38</p> <p>1 A. Let me explain that. So I get fund from the department</p> <p>2 in the form of an account, and the personnel is billed</p> <p>3 into this account.</p> <p>4 Q. So where did the funds come from that you get access</p> <p>5 to?</p> <p>6 A. From the department.</p> <p>7 Q. And where does the department get them from?</p> <p>8 A. Ask them, I don't know. They have fund for scientists</p> <p>9 to do, develop.</p> <p>10 Q. Who would have the receipts of all the expenses and the</p> <p>11 costs associated with this project?</p> <p>12 A. Sharon.</p> <p>13 Q. She notes that the costs listed are for your talc</p> <p>14 project from October 1, 2017. Is that the date on</p> <p>15 which the talc project started incurring expenses?</p> <p>16 A. I think so, yes.</p> <p>17 Q. The document notes that this does not include your</p> <p>18 effort costs. What does that mean?</p> <p>19 A. My salary.</p> <p>20 Q. Your salary at Wayne State?</p> <p>21 A. Yes.</p> <p>22 Q. So you were paid a salary at Wayne State but you were</p> <p>23 also paid by Beasley Allen to do this talc project,</p> <p>24 correct?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 40</p> <p>1 A. I can't. I didn't -- I never thought about it like</p> <p>2 that.</p> <p>3 Q. Does Exhibit Number 5 capture all of the personnel, lab</p> <p>4 supplies, equipment, services, costs for this project?</p> <p>5 A. From my lab, yes.</p> <p>6 Q. Have there been any such costs incurred since</p> <p>7 December 18, 2018?</p> <p>8 A. What's the last date here? Since what's the --</p> <p>9 Q. Since the date of this document, have there been</p> <p>10 additional costs incurred for the talc project?</p> <p>11 A. No.</p> <p>12 Q. Dr. Saed, we were also provided today with what I'm</p> <p>13 marking as Exhibit Number 6.</p> <p>14 SAED DEPOSITION EXHIBIT NUMBER 6,</p> <p>15 COPY OF CHECK DATED 11/2/2017 FOR \$15,000,</p> <p>16 WAS MARKED BY THE REPORTER</p> <p>17 FOR IDENTIFICATION</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Would you please identify for me what Exhibit Number 6</p> <p>20 is.</p> <p>21 A. This is a retainer check for my consulting work.</p> <p>22 Q. Did you ask for a retainer in connection with your</p> <p>23 consulting work or did they offer to provide that to</p> <p>24 you?</p> <p>25 A. I can't remember.</p>
<p style="text-align: right;">Page 39</p> <p>1 THE WITNESS: I was paid as a consultant for</p> <p>2 my time.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Now, all the work that you did on the talc project was</p> <p>5 paid for in an hourly way by Beasley Allen, correct?</p> <p>6 A. No.</p> <p>7 Q. What time that you spent on the talc project was not</p> <p>8 paid for by Beasley Allen?</p> <p>9 A. It's the time I spent in the lab doing my duties.</p> <p>10 Q. The time you spent in the lab doing your duties on this</p> <p>11 project?</p> <p>12 A. On this project, on other projects, too.</p> <p>13 Q. So there was time you spent on the talc project that</p> <p>14 you did not bill to Beasley Allen?</p> <p>15 A. Correct.</p> <p>16 Q. How did you divide that, the time that you did bill</p> <p>17 Beasley Allen for on the talc project and the time you</p> <p>18 didn't?</p> <p>19 A. So the time I work for extra, additional work, I billed</p> <p>20 them, like overtime, I worked Saturdays, I worked</p> <p>21 weekends, I write, I read.</p> <p>22 Q. Can you estimate the amount of time that you spent on</p> <p>23 the talc project that you did not bill Beasley Allen?</p> <p>24 A. Hour, hours you're talking?</p> <p>25 Q. By hours.</p>	<p style="text-align: right;">Page 41</p> <p>1 Q. With regard to the invoices and the retainer, have you</p> <p>2 been paid for all the invoices?</p> <p>3 A. I have been paid for these invoices, yes.</p> <p>4 Q. So with regard to the amount of the check, that was</p> <p>5 \$15,000, correct?</p> <p>6 A. The retainer check? Yes.</p> <p>7 Q. Yes, and the date of the invoice is October 19, 2017?</p> <p>8 A. Which invoice?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: Which invoice?</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Well, there's an invoice date listed at the bottom of</p> <p>13 the check of October 19, 2017. Do you see that?</p> <p>14 MS. O'DELL: I would just state for the</p> <p>15 record that there are no additional invoices, that that</p> <p>16 is my belief that data was put in by our Accounting</p> <p>17 Department when the request was made, so there's no</p> <p>18 invoice that has not been disclosed if that's --</p> <p>19 MR. HEGARTY: That was going to be my next</p> <p>20 question.</p> <p>21 The date of the check is November 2nd, 2017,</p> <p>22 correct?</p> <p>23 THE WITNESS: Correct.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. And all these funds went to you, correct?</p>

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<p style="text-align: right;">Page 42</p> <p>1 A. The 15,000?</p> <p>2 Q. Yes.</p> <p>3 A. Yes.</p> <p>4 SAED DEPOSITION EXHIBIT NUMBER 7,</p> <p>5 MOLECULAR BASIS SUPPORTING THE ASSOCIATION OF</p> <p>6 TALCUM POWDER USE WITH INCREASED RISK OF OVARIAN</p> <p>7 CANCER, WAS MARKED BY THE REPORTER</p> <p>8 FOR IDENTIFICATION</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. I'm going to mark next as Exhibit Number 7 a copy of a</p> <p>11 manuscript we've been provided, which I referenced</p> <p>12 earlier, the manuscript that I marked as Exhibit</p> <p>13 Number 7 is entitled Molecular Basis Supporting the</p> <p>14 Association of Talcum Powder Use With Increased Risk of</p> <p>15 Ovarian Cancer. Do you see what I'm referring to,</p> <p>16 Doctor?</p> <p>17 A. Yes.</p> <p>18 Q. First of all, is this the current version of the paper</p> <p>19 you submitted to Reproductive Sciences?</p> <p>20 A. Yes.</p> <p>21 Q. Do you have prior drafts of this paper in your office</p> <p>22 or in your possession?</p> <p>23 A. Do I have drafts?</p> <p>24 Q. Correct.</p> <p>25 A. Like --</p>	<p style="text-align: right;">Page 44</p> <p>1 submitted by the author section says January 3rd, 2019,</p> <p>2 which is after December 26, 2018. So my question is</p> <p>3 where is the manuscript that was submitted before</p> <p>4 December 26, 2018?</p> <p>5 A. Okay. So when you submit a manuscript, they return</p> <p>6 they usually give you some corrections or editing to</p> <p>7 do, and then you do the editing, and then you resubmit</p> <p>8 the manuscript, so I have both copies. Are you</p> <p>9 interested to see the one that went to revision versus</p> <p>10 the one after revision?</p> <p>11 Q. You have the copy that you initially sent to</p> <p>12 Reproductive Sciences which is the one referred to in</p> <p>13 the e-mail of December 26, 2018?</p> <p>14 A. Sure.</p> <p>15 Q. Are there only two drafts of the manuscript, the one</p> <p>16 you submitted prior to December 26, 2018 and the one we</p> <p>17 marked as Exhibit Number 7?</p> <p>18 A. For Reproductive Science, yes.</p> <p>19 Q. Have you made any revisions to the document that we</p> <p>20 have marked as Exhibit Number 7?</p> <p>21 A. Let's see if I remember, so this is the first -- which</p> <p>22 one is this, okay, because there is one original that</p> <p>23 we submitted.</p> <p>24 Q. Correct.</p> <p>25 A. Went to review, the reviewer asked for some</p>
<p style="text-align: right;">Page 43</p> <p>1 Q. Well, let me explain. Go to the very last page of</p> <p>2 Exhibit Number 7.</p> <p>3 A. Okay.</p> <p>4 Q. Very last page.</p> <p>5 A. Okay.</p> <p>6 Q. There's an e-mail there.</p> <p>7 A. Oh.</p> <p>8 Q. Of December 26, 2018, which would indicate that you</p> <p>9 submitted the paper in advance of that date, yet on the</p> <p>10 first page of Exhibit Number 7 it reports the date</p> <p>11 submitted by the author of January 3rd, 2019. So there</p> <p>12 must have been a prior manuscript submitted to</p> <p>13 Reproductive Sciences before Exhibit Number 7, correct?</p> <p>14 A. Hold on. I need to digest this. Can you repeat that,</p> <p>15 please?</p> <p>16 Q. Sure.</p> <p>17 A. What are we talking about?</p> <p>18 Q. The e-mail that you're looking at is dated December 26,</p> <p>19 2018, correct?</p> <p>20 A. Yes.</p> <p>21 Q. That e-mail refers to a manuscript you had submitted,</p> <p>22 which would have been submitted before that date,</p> <p>23 correct?</p> <p>24 A. Yes.</p> <p>25 Q. The first page of Exhibit Number 7 in the date</p>	<p style="text-align: right;">Page 45</p> <p>1 modification, I did it and resubmit it.</p> <p>2 Q. Is Exhibit Number -- I'm sorry, go ahead.</p> <p>3 A. So this, I can't remember is this the most recent one</p> <p>4 or not.</p> <p>5 Q. Did you bring a copy today?</p> <p>6 A. I have a copy.</p> <p>7 Q. You brought a copy from your office?</p> <p>8 A. Yeah, this is a copy from my office.</p> <p>9 Q. May I see it, please?</p> <p>10 A. Yes.</p> <p>11 SAED DEPOSITION EXHIBIT NUMBER 8,</p> <p>12 MOLECULAR BASIS SUPPORTING THE ASSOCIATION OF</p> <p>13 TALCUM POWDER USE WITH INCREASED RISK OF OVARIAN</p> <p>14 CANCER,</p> <p>15 WAS MARKED BY THE REPORTER</p> <p>16 FOR IDENTIFICATION</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. I'm going to mark as Exhibit Number 8 a copy of the</p> <p>19 article or manuscript that Dr. Saed just provided to</p> <p>20 me. At least the cover page contains the same date</p> <p>21 submitted by the author date. Would you look at the</p> <p>22 two Exhibit Number 7 and Exhibit Number 8, and tell me</p> <p>23 whether they are the same?</p> <p>24 A. Yeah, it looks the same to me.</p> <p>25 Q. So have there been any additional revisions to the</p>

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<p style="text-align: right;">Page 46</p> <p>1 manuscript that we've marked as 7 and 8?</p> <p>2 A. No. We revised it according to the reviewer's comment</p> <p>3 and resubmitted it, and then it was officially</p> <p>4 accepted.</p> <p>5 Q. Did you submit the manuscript to any other journals?</p> <p>6 A. Prior to this?</p> <p>7 Q. Prior to this.</p> <p>8 A. Yes.</p> <p>9 Q. What journals did you submit to?</p> <p>10 A. OB-GYN Oncology.</p> <p>11 Q. When did you submit the manuscript to OB-GYN Oncology?</p> <p>12 A. I'm not good on dates.</p> <p>13 Q. You submitted it before --</p> <p>14 A. Prior.</p> <p>15 Q. Prior to submitting it to Reproductive Sciences?</p> <p>16 A. Correct.</p> <p>17 Q. Are you able to estimate when you completed the</p> <p>18 manuscript such that it could be submitted to a</p> <p>19 journal?</p> <p>20 A. I would say -- what's the date now -- September,</p> <p>21 October, September maybe around.</p> <p>22 Q. Did you get a response from OB-GYN Oncology to your</p> <p>23 submission?</p> <p>24 A. I did.</p> <p>25 Q. What was their response?</p>	<p style="text-align: right;">Page 48</p> <p>1 A. Correct.</p> <p>2 Q. They, based on correspondence with you, sent that paper</p> <p>3 to peer reviewers, correct?</p> <p>4 A. Correct.</p> <p>5 Q. How many peer reviewers did they send it to?</p> <p>6 A. I don't know.</p> <p>7 Q. How many comments back from peer reviewers did you</p> <p>8 receive, just by peer reviewer number?</p> <p>9 A. I know, but I'm trying to remember, maybe one or two, I</p> <p>10 can't remember, I think two.</p> <p>11 Q. You mentioned one of the comments was --</p> <p>12 A. But two that they commented. So usually they send it</p> <p>13 to more. If they have no comments, they don't include</p> <p>14 them.</p> <p>15 Q. One of the reviewers commented that you needed to do</p> <p>16 additional in vivo animal studies to show the same</p> <p>17 effect that you reported in cell cultures that you did,</p> <p>18 correct?</p> <p>19 MS. O'DELL: Object to form.</p> <p>20 THE WITNESS: No.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. What did he say or she say?</p> <p>23 A. It was said that this is very exciting work,</p> <p>24 interesting work, has a biological relevance, it would</p> <p>25 be interesting to see if this can be shown in vivo.</p>
<p style="text-align: right;">Page 47</p> <p>1 A. That I needed to do in vivo, additional in vivo animal</p> <p>2 experiments.</p> <p>3 Q. That you needed to do additional in vivo animal</p> <p>4 experiments before they would agree to publish your</p> <p>5 paper; is that correct?</p> <p>6 A. No, they -- usually the basis of their rejection, this</p> <p>7 is a review of comment, not the editor request, so</p> <p>8 comments you can do, you can agree with or you can</p> <p>9 disagree with. So I always publish papers and I'm very</p> <p>10 familiar with this process. So there's a distinction</p> <p>11 between editor's opinion and reviewer's comment. So</p> <p>12 reviewer comments, they're not bound -- I'm not bound</p> <p>13 to their comments. I may agree with them and I may</p> <p>14 disagree with them. So the reviewer -- the editor,</p> <p>15 they usually, their policy, they use it based on</p> <p>16 reviewer's comment, that's part of the concentration,</p> <p>17 the other part will be the how many -- the volume, how</p> <p>18 many they receive and priority for the articles to be</p> <p>19 published.</p> <p>20 Q. So as to the chronology, you completed a draft of your</p> <p>21 manuscript that we marked as Exhibit Number 7 and 8,</p> <p>22 you submitted that manuscript initially to OB-GYN</p> <p>23 Oncology --</p> <p>24 A. Correct.</p> <p>25 Q. -- in the September 2018 time frame?</p>	<p style="text-align: right;">Page 49</p> <p>1 Q. Do you remember anything else that was said in those</p> <p>2 comments besides what you provided to us this morning?</p> <p>3 A. Yeah, they like it, they love my work.</p> <p>4 Q. Anything else you can recall from the comments?</p> <p>5 A. No, this is positive and it's good data that they need</p> <p>6 to -- complimented with.</p> <p>7 Q. So with regard to the comments, then what -- strike</p> <p>8 that. OB-GYN Oncology rejected your paper, correct?</p> <p>9 A. They said that -- yeah, they said that we don't want --</p> <p>10 priority at this time.</p> <p>11 Q. Did they say why they rejected your paper?</p> <p>12 A. They say we have lot of papers received by the journal</p> <p>13 and it's not a priority right now.</p> <p>14 Q. Do you have all the documents of your submission to</p> <p>15 OB-GYN Oncology and their -- the comments and other</p> <p>16 documents that you received back in connection with</p> <p>17 that submission?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Yes?</p> <p>21 A. I want to see -- what's the question? Sorry.</p> <p>22 Q. Sure. Do you have the documentation, all the documents</p> <p>23 of your submission to OB-GYN Oncology and their</p> <p>24 response back?</p> <p>25 A. You mean the manuscript?</p>

13 (Pages 46 to 49)

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<p style="text-align: right;">Page 50</p> <p>1 Q. The manuscript, your cover letter, the letter back, the</p> <p>2 comments, the comments you received back, do you have</p> <p>3 all that material?</p> <p>4 A. Yes.</p> <p>5 Q. Is that back in your office?</p> <p>6 A. It's in my office, yes. You talking about manuscript,</p> <p>7 right?</p> <p>8 Q. Well, the manuscript and the reviewer comments.</p> <p>9 A. And the reviewer comments, yes.</p> <p>10 Q. You chose not to do or try to replicate your results in</p> <p>11 an in vivo animal model, correct?</p> <p>12 A. No, it's not correct, I didn't choose, I just don't</p> <p>13 have the time to do it and the money.</p> <p>14 Q. Did you submit your manuscript to any other journals</p> <p>15 besides OB-GYN Oncology and Reproductive Sciences?</p> <p>16 A. No.</p> <p>17 Q. How did you choose to submit your journal first to</p> <p>18 OB-GYN Oncology? Why did you choose that journal?</p> <p>19 A. Those, the OB-GYN Oncology and Reproductive Sciences</p> <p>20 are the major societies for our specialty, and most</p> <p>21 readers -- OB-GYN readers read those two manuscripts, I</p> <p>22 mean journals.</p> <p>23 Q. Of your specialty, which specialty is that?</p> <p>24 A. Like our -- like in the field of OB-GYN research.</p> <p>25 Q. And what resource do you have that Reproductive</p>	<p style="text-align: right;">Page 52</p> <p>1 does it represent all the work that you did that went</p> <p>2 into the paper we marked as Exhibit Number 7?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: So, yeah, so this part starting</p> <p>5 here, from here all the way to the end, that represents</p> <p>6 everything in the manuscript.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. You're pointing to 30?</p> <p>9 A. From here, yes.</p> <p>10 MS. O'DELL: To the end.</p> <p>11 THE WITNESS: To the end.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. What is contained in Pages 1 through 29?</p> <p>14 A. This is like preliminary trials that we were running,</p> <p>15 testing, so forth, the talc.</p> <p>16 Q. Do Pages 1 through 29 represent activities as part of</p> <p>17 the work that generated the results contained on</p> <p>18 Pages 30 thereafter?</p> <p>19 A. No.</p> <p>20 Q. What does it represent, then?</p> <p>21 A. It's a trial, it's a pilot experiment to tune-up the</p> <p>22 technique.</p> <p>23 Q. When did this -- this pilot experiment goes back, at</p> <p>24 least based on the date of the notebook, to 10-15-17?</p> <p>25 A. Correct.</p>
<p style="text-align: right;">Page 51</p> <p>1 Sciences is a journal that most in your specialty</p> <p>2 review or read?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I mean do I have a number? Or</p> <p>5 you mean the source where I got that from?</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Yeah, where did you get that from?</p> <p>8 A. From my experience with them for the last 25 years.</p> <p>9 Q. Have you published in that journal before?</p> <p>10 A. Yes.</p> <p>11 Q. Have you published in OB-GYN Oncology before?</p> <p>12 A. Yes.</p> <p>13 Q. Is there such a thing as something called an impact</p> <p>14 factor of a journal?</p> <p>15 A. Correct.</p> <p>16 Q. Do you know what the impact factor is of Reproductive</p> <p>17 Sciences?</p> <p>18 A. About 3, 2.8 something.</p> <p>19 Q. How about OB-GYN Oncology?</p> <p>20 A. 4, the upper 5, the upper 4, 5, 4.6, 5 maybe.</p> <p>21 Q. We were also, as we talked earlier, provided with the</p> <p>22 original lab notebook that -- in connection with the</p> <p>23 article that you have submitted to Reproductive</p> <p>24 Sciences and that you submitted to OB-GYN Oncology. Is</p> <p>25 what we've designated as Exhibit Number 2 all of the --</p>	<p style="text-align: right;">Page 53</p> <p>1 Q. Is it -- do you always do pilot experiments before you</p> <p>2 do an experiment like this?</p> <p>3 A. Sure.</p> <p>4 Q. Why do you always do a pilot experiment?</p> <p>5 A. You need to figure out the right conditions, right</p> <p>6 concentration, the right incubation time.</p> <p>7 Q. And how does a pilot study provide that information?</p> <p>8 A. I don't understand what you mean.</p> <p>9 Q. How does a pilot study provide you with information to</p> <p>10 know you're using the right conditions, the right</p> <p>11 concentration?</p> <p>12 A. So when you use a concentration of 1,000 microgram per</p> <p>13 ml and it kills your cells, you know it's toxic, you</p> <p>14 should go lower.</p> <p>15 Q. Is that what you did here?</p> <p>16 A. Yes.</p> <p>17 Q. Do you do any other testing like that to determine the</p> <p>18 parameters of your later tests?</p> <p>19 A. Sorry, I don't understand.</p> <p>20 Q. Well the test you just described is sort of that it, it</p> <p>21 sort of set an upper limit of where you could go before</p> <p>22 you kill the cells, right?</p> <p>23 MS. O'DELL: Object.</p> <p>24 THE WITNESS: Just an example, I'm giving you</p> <p>25 an example.</p>

14 (Pages 50 to 53)

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<p style="text-align: right;">Page 54</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. An example. Do you recall anything specific that you</p> <p>3 did in the pilot study that helped you define the</p> <p>4 parameters of the later study that you did?</p> <p>5 A. Other than the dose, most of the technology and the</p> <p>6 methods that we used, it's really standard in our</p> <p>7 laboratory, we have published them, we -- and not just</p> <p>8 us, it's standard accepted technology everywhere in</p> <p>9 this field.</p> <p>10 Q. And how did the pilot study that's reflected in Exhibit</p> <p>11 Number 2 inform you as to the studies -- study that you</p> <p>12 did that are reflected in the rest of the pages?</p> <p>13 A. Yes, so basically we looked at the dose here and this</p> <p>14 pilot study showing that the initial dose was high and</p> <p>15 it was like 500 microgram per ml to a thousand, that's</p> <p>16 how we started, and we figured out that this dose</p> <p>17 killed the cells and induced some toxicity, so this is</p> <p>18 why we learned from this, and then we turned up the</p> <p>19 CA-125 assay, this is turning up the assay to see how</p> <p>20 much you need to use. Is it from the media? Is it</p> <p>21 from the cell? You need to set up all this, and this</p> <p>22 is done in here, and it's described, it's not hidden,</p> <p>23 it's all over, it's all here. But we determined</p> <p>24 basically the dose, and we figured out what is toxic to</p> <p>25 the cells.</p>	<p style="text-align: right;">Page 56</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Are you confident that it was one or the other?</p> <p>3 A. Yes.</p> <p>4 Q. The lab notebook that we've been provided marked as</p> <p>5 Exhibit Number 2 has a first date of 10-15-17. Is that</p> <p>6 the first date that there was any lab work done either</p> <p>7 in the pilot study or the later study?</p> <p>8 A. No.</p> <p>9 Q. What is the earliest date of work?</p> <p>10 A. May I have this?</p> <p>11 Q. Yeah, I'm handing you Exhibit Number 3.</p> <p>12 A. So the first work that we did with talc, 9-26.</p> <p>13 Q. Dr. Saed referred to Exhibit Number 3 and pointed me to</p> <p>14 a page that's dated 9-26. First of all, what is</p> <p>15 represented or contained in Exhibit Number 3, this lab</p> <p>16 notebook?</p> <p>17 A. So this part, okay, so I have to indicate something, we</p> <p>18 share lab notebook, we use them for -- so not</p> <p>19 necessarily one lab notebook for one project. So, for</p> <p>20 example, the first part of this lab notebook --</p> <p>21 MS. O'DELL: Which is Exhibit 3.</p> <p>22 THE WITNESS: -- which is Exhibit 3, looking</p> <p>23 at the effect of a dipeptide on adhesion markers, and</p> <p>24 then we continued with talc, so sometimes we mix up,</p> <p>25 like we don't necessarily use one project for one lab</p>
<p style="text-align: right;">Page 55</p> <p>1 Q. How did you come to start with the 500 milligram per</p> <p>2 milliliter dose?</p> <p>3 A. So we read in the literature prior experiments people</p> <p>4 did from 5 all the way to 1,000, and I found the paper</p> <p>5 after we did -- we thought first initial experiment we</p> <p>6 will hit the cells with high concentration, see what</p> <p>7 happened, and then titrate it down, but then we found</p> <p>8 it's toxic effect on the cells so -- and then I came</p> <p>9 across a paper where they used these small doses that</p> <p>10 they found biological effect with, and they used 5, 20</p> <p>11 and 100 and up to 500, so I chose the lower range,</p> <p>12 which is 5, 20, and 100 for my study.</p> <p>13 Q. What paper was that?</p> <p>14 A. That was -- do you have that paper --</p> <p>15 Q. Is that the Buz/Zard paper?</p> <p>16 A. Let me see, do you have the Buz/Zard --</p> <p>17 MS. O'DELL: It's right in your notebook</p> <p>18 there, Doctor.</p> <p>19 THE WITNESS: Where do I find it now here?</p> <p>20 MS. O'DELL: You might look in your</p> <p>21 references of your report.</p> <p>22 THE WITNESS: Right.</p> <p>23 MS. O'DELL: And then we can go from there.</p> <p>24 THE WITNESS: I think it's Buz/Zard or</p> <p>25 Shukla, one or the other, I can't remember.</p>	<p style="text-align: right;">Page 57</p> <p>1 notebook, okay. So this part of the notebook --</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. The first part?</p> <p>4 A. The first part is for the different study. This part</p> <p>5 where we started the actual work with talc.</p> <p>6 Q. When you -- you started referencing the pages, this</p> <p>7 part, then what does this part represent being done?</p> <p>8 A. This part was an experiment that we did exposing cells,</p> <p>9 ovarian cancer cells, to talc, Fisher, and look at</p> <p>10 oxidative stress markers. We used three ovarian cancer</p> <p>11 cell lines, and we used macrophages of normal</p> <p>12 epithelial cells. And the result of this work was</p> <p>13 submitted to Society of Reproductive Investigation</p> <p>14 meeting that was held last year March, yes, last year</p> <p>15 in San Diego, and you can see all the way down, this is</p> <p>16 the poster that resulted from this work.</p> <p>17 Q. The poster you pointed to is on Page 63?</p> <p>18 A. Yes.</p> <p>19 Q. Was there a pilot study done before doing this</p> <p>20 experiment?</p> <p>21 A. So this is a pilot study.</p> <p>22 Q. So the study that we are looking at dated -- with the</p> <p>23 start date of 9-26-2017 --</p> <p>24 A. Right.</p> <p>25 Q. -- you consider that to be a pilot study?</p>

15 (Pages 54 to 57)

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<p style="text-align: right;">Page 58</p> <p>1 A. This is a -- we have many pilot studies. It depends on 2 what marker you're doing the pilot study for. So 3 there's a pilot study for CA-125. There is a pilot 4 study for the dose. There is a pilot study for cells. 5 So this is a pilot study. 6 Q. In the other notebook you went from a pilot study to 7 doing a subsequent study. 8 A. Correct. 9 Q. Did you do that with this pilot study? 10 A. No, this is only done with -- this is a preliminary 11 study that we did, and we only tested mRNA levels of 12 some oxidative stress markers. The other study that 13 you're referring to with the manuscript, this is a 14 comprehensive study that looked at every fold of gene 15 expression from mRNA to DNA to ELISA to activity of 16 proteins, everything. This is just simply a pilot 17 experiment looking at, yes, there is an effect, no, 18 there is not an effect, and, yes, there is an effect, 19 so we published it. 20 Q. The first date of any study that you did with talc is 21 September 26, 2017? 22 A. Correct. 23 Q. Who is involved in the study that we looked at in 24 Exhibit Number 3 whose begin date was September 26, 25 2017?</p>	<p style="text-align: right;">Page 60</p> <p>1 call from Miss Thompson, you would have still done 2 these studies? 3 A. Correct. 4 Q. Were the studies in the works at the time that Miss 5 Thompson called you? 6 A. I was reviewing literature only. 7 Q. You had not thought about doing actual laboratory 8 studies before Miss Thompson had called you involving 9 talc? 10 A. I planned it before she called me. 11 Q. You had actually planned to do laboratory studies? 12 A. Correct. 13 Q. Do you have any documentation of that plan? 14 A. No. 15 Q. Did you talk with anyone and tell them that your plan 16 was to do studies involving talc before you were called 17 by Miss Thompson? 18 A. We always discussed talking about looking at any 19 substance that induces inflammation and oxidative 20 stress. So we always talk in the lab and with 21 colleagues about any substance. Talc was brought up, 22 yes. 23 Q. To whom did you speak with about talc and doing an 24 experiment about talc before you received a call from 25 Miss Thompson?</p>
<p style="text-align: right;">Page 59</p> <p>1 A. That's Nicole King and Ira, and myself. 2 Q. What prompted you to do this initial study? 3 A. My lab interest is ovarian cancer and oxidative stress, 4 we talked about that, I answered that, the media and, 5 you know, what's going on, and this is the core of my 6 lab specialty is looking at oxidative stress markers, 7 inflammation, and ovarian cancer. 8 Q. Is it your testimony that this study with the start 9 date of 9-26-2017 was not prompted by your call with 10 Miss Thompson? 11 MS. O'DELL: Object to the call. 12 THE WITNESS: Was not prompted? 13 BY MR. HEGARTY: 14 Q. Yes. 15 MS. O'DELL: Object to the form. 16 BY MR. HEGARTY: 17 Q. In other words, you would not have done this study or 18 the study for which you have submitted a manuscript to 19 Reproductive Sciences if Miss Thompson had not called 20 you, correct? 21 MS. O'DELL: Object to the form. 22 THE WITNESS: No, I was always interested in 23 doing this. 24 BY MR. HEGARTY: 25 Q. So it's your testimony that if you had not gotten a</p>	<p style="text-align: right;">Page 61</p> <p>1 A. I discussed with Nicole. 2 Q. When was that discussion? 3 A. I can't remember dates, but we always discussed markers 4 of oxidative stress. 5 Q. Well, you said that you always talk in the lab and with 6 colleagues about any substance. Talc was brought up. 7 A. Correct. 8 Q. What substances had you tested in your lab with regard 9 to oxidative stress before your study about talc? 10 A. We go backwards, we go looking at reducing oxidative 11 stress and looking at mechanisms, or manipulating 12 alteration of oxidative stress, like, for example, we 13 did the work where we added a scavenger of Superoxide 14 dismutase, which is a very powerful oxidant, and we 15 looked at inducing apoptosis in ovarian cancer cells. 16 We're looking at intervention, changing the cell redox 17 balance, alteration of that balance, it is given, it's 18 accepted in the literature and in our world that cancer 19 cells and ovarian cancer cells included, they all have 20 characterized by a pro-oxidant state that is given, 21 it's known. So we don't need to show a substance that 22 induces further that oxidative stress. We are looking 23 for attenuating and modulating that oxidative stress 24 and see the effect, the downstream effect. We have 25 done that, we have published that with looking at SRNA</p>

16 (Pages 58 to 61)

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<p style="text-align: right;">Page 62</p> <p>1 to shut down proteins, knock down proteins, we did it</p> <p>2 for myeloperoxidase, we did it for ionase, we did it</p> <p>3 for SOD so.</p> <p>4 Q. But prior to the call you received from Miss Thompson,</p> <p>5 you had never tested any particulate or exposed cells</p> <p>6 to any particulate and looked for oxidative stress,</p> <p>7 correct?</p> <p>8 A. No, not correct. I used hypoxia, induced hypoxia and</p> <p>9 look at normal cells.</p> <p>10 Q. What particles did you apply to cells in that study?</p> <p>11 A. Hypoxia.</p> <p>12 Q. What's hypoxia?</p> <p>13 A. It is the creation of a hypoxic micro environment into</p> <p>14 the cells. This can be in vivo induced by infection,</p> <p>15 by wound, by many other factors that do that.</p> <p>16 Q. Let me clarify my question, then. My question is what</p> <p>17 environmental particles that are not generated in vivo</p> <p>18 had you ever applied to cells and culture prior to the</p> <p>19 call from Miss Thompson?</p> <p>20 A. That we published? I don't -- like a given particle</p> <p>21 you're talking about?</p> <p>22 Q. Correct.</p> <p>23 A. No, I don't have any, I never done anything like that.</p> <p>24 Q. What studies had you actually planned on doing with</p> <p>25 talc before your call -- before the call came from Miss</p>	<p style="text-align: right;">Page 64</p> <p>1 Q. -- informal about putting a test together, correct?</p> <p>2 A. I said I was planning to do this.</p> <p>3 Q. Okay.</p> <p>4 A. I had a plan to do this.</p> <p>5 Q. Okay. What was your plan?</p> <p>6 A. This is the plan -- the plan -- okay, this is important</p> <p>7 to know, that I have this set up ready in my lab, ready</p> <p>8 to go. We have all the technology for all these</p> <p>9 markers. So it is not hard just to add -- so when I</p> <p>10 plan, it means I -- we had used the setup that I</p> <p>11 already have in my laboratory, that's what I -- in my</p> <p>12 plan.</p> <p>13 Q. But you had not done anything to further that plan?</p> <p>14 A. Physically, no.</p> <p>15 Q. Let me finish, you had not done anything to further</p> <p>16 that plan until after the call came from Miss Thompson,</p> <p>17 correct?</p> <p>18 A. Correct.</p> <p>19 Q. Did you discuss at all the makeup of the study or what</p> <p>20 you were going to do with the study or the methods of</p> <p>21 the study with Beasley Allen before you did them?</p> <p>22 A. No.</p> <p>23 Q. Did you have any discussions at all with attorneys for</p> <p>24 Beasley Allen about the concept of the study, the</p> <p>25 methods of the study, the protocol of the study, how</p>
<p style="text-align: right;">Page 63</p> <p>1 Thompson? Had you actually formed the framework of a</p> <p>2 study?</p> <p>3 A. No, I was just thinking about the overall, it would be</p> <p>4 interesting to see if this is -- this will induce</p> <p>5 inflammation in our cells, and if it does, then it</p> <p>6 should be linked to the risk of ovarian cancer, so</p> <p>7 thinking, just talking about it.</p> <p>8 Q. With regard to the manuscript that -- strike that.</p> <p>9 With regard to the tests that were part of the</p> <p>10 manuscript, those tests were done in connection with</p> <p>11 your communications with Beasley Allen, correct?</p> <p>12 A. Those tests?</p> <p>13 Q. Yes.</p> <p>14 A. What do you mean by communication?</p> <p>15 MS. O'DELL: Object to form.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Well, you talked with Beasley Allen about doing those</p> <p>18 tests, correct, before you did them?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: No, I was planning to do them,</p> <p>21 anyways.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. You just said, though, before the call you had not done</p> <p>24 anything formal or even --</p> <p>25 A. Yeah, I said --</p>	<p style="text-align: right;">Page 65</p> <p>1 the study was going to be done, anything like that?</p> <p>2 MS. O'DELL: Let me just stop you right</p> <p>3 there. I think when you're talking about conversations</p> <p>4 you -- you're talking about after the time that he's</p> <p>5 been engaged by Beasley Allen and those discussions</p> <p>6 would be protected by the privilege. I'm going to</p> <p>7 instruct the witness not to answer.</p> <p>8 MR. HEGARTY: Well, my questions are related</p> <p>9 solely to the manuscript, the testing in the manuscript</p> <p>10 that has been submitted to Reproductive Sciences. So</p> <p>11 is it your position that all the communications you had</p> <p>12 with regard to the tests done for purposes of the</p> <p>13 publication Reproductive Sciences and the writing of</p> <p>14 the article, submission of the article, are protected</p> <p>15 by the consulting privilege?</p> <p>16 MS. O'DELL: Well, and as you know, the</p> <p>17 substance of the manuscript largely is Dr. Saed's</p> <p>18 expert report, and the work that he did in terms of</p> <p>19 consulting was paid for by Beasley Allen and he was</p> <p>20 doing that as a part of the consulting arrangement.</p> <p>21 So, yes, to the degree he had conversations with the</p> <p>22 lawyers, we're going to -- I'm going to instruct him</p> <p>23 not to answer.</p> <p>24 MR. HEGARTY: I'm not going to argue with</p> <p>25 you. I just want to make sure I'm interesting that</p>

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<p style="text-align: right;">Page 66</p> <p>1 that's -- that your objection extends to any question</p> <p>2 that I would ask with regard to communications with</p> <p>3 Beasley Allen or attorneys for the plaintiffs with</p> <p>4 regard to the creation of the study, the setup of the</p> <p>5 study, the protocol of the study, doing the study,</p> <p>6 writing the manuscript.</p> <p>7 MS. O'DELL: That was not, your question's a</p> <p>8 little bit different than what you just described. You</p> <p>9 can ask your questions, there may be some that are</p> <p>10 appropriate and some not, but as regard the question</p> <p>11 that's on the table, I think that's inappropriate and</p> <p>12 I've instructed him not to answer.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Dr. Saed, did you have any discussions with any</p> <p>15 attorneys for Beasley Allen regarding the pilot study</p> <p>16 that we talked about in Exhibit Number 3?</p> <p>17 A. What's Exhibit Number 3?</p> <p>18 Q. The one -- the study that's dated 9-26-2007.</p> <p>19 MS. O'DELL: Objection, vague.</p> <p>20 THE WITNESS: Again, okay, here is my answer.</p> <p>21 No one has interfered with the design of the study, how</p> <p>22 the study should be done, what assay should be applied,</p> <p>23 what method of analysis should be performed, the</p> <p>24 writing of the results, the analysis of the results,</p> <p>25 this is my world, this is my specialty. No one</p>	<p style="text-align: right;">Page 68</p> <p>1 Number --</p> <p>2 A. My lab.</p> <p>3 Q. Sorry let me finish.</p> <p>4 A. We already talked.</p> <p>5 Q. Who paid for the pilot study that's reported in Exhibit</p> <p>6 Number 3?</p> <p>7 MS. O'DELL: Object to the form, to the</p> <p>8 degree it's vague.</p> <p>9 MR. HEGARTY: You can answer.</p> <p>10 THE WITNESS: We discussed this, right?</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Now, the before questions, at least I thought, were</p> <p>13 limited to the lab costs for -- and personnel costs for</p> <p>14 the study in exhibit -- in the first notebook, Number</p> <p>15 2. Did those lab costs reflected in that exhibit,</p> <p>16 which is Exhibit Number 5, also cover the pilot study</p> <p>17 that's in notebook that we marked as Exhibit Number 3?</p> <p>18 A. The answer, my lab is paid for -- paid for all the</p> <p>19 studies that we did.</p> <p>20 Q. The --</p> <p>21 A. Yeah, you can go back five days later.</p> <p>22 Q. Exhibit Number 5 reports the costs of the talc project</p> <p>23 dated from October 1st, 2017. This pilot study began</p> <p>24 on September 26, 2017 correct?</p> <p>25 A. Correct.</p>
<p style="text-align: right;">Page 67</p> <p>1 interfered with that.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. I appreciate that. That was not my question. My</p> <p>4 question was simply did you have any discussions with</p> <p>5 attorneys for Beasley Allen or attorneys for plaintiffs</p> <p>6 in this case with regard to conducting the pilot study</p> <p>7 that's in Exhibit Number 3 with the start date of</p> <p>8 9-26-2017?</p> <p>9 A. They know that I'm doing this.</p> <p>10 Q. Did they know that you were doing it at the time that</p> <p>11 you were doing it?</p> <p>12 A. At this time?</p> <p>13 Q. Yes.</p> <p>14 A. Yes.</p> <p>15 Q. Did you have discussions in advance of doing that study</p> <p>16 with them?</p> <p>17 A. I actually designed this whole thing. So when they</p> <p>18 approached me and I got -- you know, I told them this</p> <p>19 is what I'm going to do, this is what I have in mind,</p> <p>20 we have all this setup in my lab and I want to do it,</p> <p>21 and I did it.</p> <p>22 Q. Did they provide to you any suggestions on how to do</p> <p>23 this study?</p> <p>24 A. They don't know nothing about this.</p> <p>25 Q. Who paid for the pilot study that's reported in Exhibit</p>	<p style="text-align: right;">Page 69</p> <p>1 Q. Is it your testimony that the costs of the pilot study</p> <p>2 are included in what's listed in Exhibit Number 5?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: We started the -- culturing the</p> <p>5 cells, so the idea -- are you talking about the actual</p> <p>6 money? We started -- yes, it is included there.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. You shook your head. I want to make sure I got it on</p> <p>9 the record.</p> <p>10 A. Yes.</p> <p>11 Q. So the costs for the pilot study in Exhibit Number 3</p> <p>12 that began on September 26, 2017, are contained in</p> <p>13 Exhibit Number 5?</p> <p>14 A. Correct. It takes three weeks to get the cells up and</p> <p>15 going.</p> <p>16 MR. HEGARTY: Want to take a break? We've</p> <p>17 been going for about an hour and 20 minutes. Take a</p> <p>18 break.</p> <p>19 THE VIDEOGRAPHER: Going off the record at</p> <p>20 10:32 a.m.</p> <p>21 (A short recess was taken.)</p> <p>22 THE VIDEOGRAPHER: We're back on the record</p> <p>23 at 10:51 a.m.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Dr. Saed, when we left off, we were talking about any</p>

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<p>1 communication you had with Beasley Allen or other 2 attorneys for the plaintiffs with regard to the 3 experiments that you did or the preparation of the 4 manuscript that you've submitted to Reproductive 5 Sciences. Over the course of the time that you did the 6 experiments, that you did the writing, that you 7 submitted to Reproductive Sciences, OB-GYN Oncology, 8 did you exchange any e-mails or letters with attorneys 9 for Beasley Allen or the plaintiffs with regard to the 10 testing, the writing, the submission of the manuscript? 11 MS. O'DELL: Objection to form. 12 THE WITNESS: Can you please repeat the 13 question, clarify what you -- 14 BY MR. HEGARTY: 15 Q. Sure. Well, during the time that you were doing the 16 testing that we've been talking about? 17 A. Experiments. 18 Q. -- that's reflected in the lab notebooks, you call them 19 experiments, in the time that you wrote the paper that 20 you first submitted to OB-GYN Oncology and then later 21 to Reproductive Sciences. Did you have communications 22 with attorneys for Beasley Allen or any plaintiff in 23 this litigation regarding the experiments or regarding 24 the writing of the article or regarding the submission 25 of the article to journals?</p>	<p>1 the manuscript, the submission of the manuscript; is 2 that correct? 3 MS. O'DELL: Object to the form. 4 BY MR. HEGARTY: 5 Q. You can answer. 6 A. I said -- I answered you. I said I did not discuss the 7 design of the experiments, the results of the 8 experiments, where to submit it, how to analyze the 9 data, all this work I did myself. 10 Q. Understood. I'm not asking if they provided input on 11 how to do it or how to write it or where to send it. 12 I'm asking if you had discussions with any attorney for 13 Beasley Allen or any other attorney for Plaintiff over 14 the course of doing all this work about what you were 15 doing? 16 A. I still don't understand discussion, what does the 17 discussion mean? 18 Q. Well, discussion means a phone call, an in-person 19 meeting, an e-mail? 20 A. Oh. 21 Q. Any communication that talks about what you're doing. 22 MS. O'DELL: Excuse me, you may answer the 23 question whether calls or meetings occurred, you may 24 answer that yes or no, but you cannot divulge the 25 discussions or the topics that were included in those</p>
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<p>1 A. No. 2 Q. Did you have any telephone calls or meetings during 3 the -- about the experiments or the writing of the 4 manuscript for the journals or the submission of the 5 journals with attorneys for Beasley Allen or any 6 plaintiff in this litigation? 7 MS. O'DELL: Objection to the form. 8 THE WITNESS: No. 9 MS. O'DELL: I was just going to instruct you 10 to the degree that you're asking him about subjects 11 that were discussed in meetings with attorneys for 12 the plaintiff, don't discuss those, the subject matter 13 because those, they're not entitled to know those 14 discussions, so to the degree you can answer your 15 questions outside those parameters, you may. 16 THE WITNESS: My answer was no for any 17 discussion related to the design of the experiments, 18 the results of the work, the submission to the journal, 19 which journal to submit to, writing the manuscript, all 20 that work I know the answer was no to that work. 21 BY MR. HEGARTY: 22 Q. So as to everything you just described, you had no 23 discussions with the attorneys for Beasley Allen or any 24 plaintiffs in this case about anything dealing with 25 experiments, the design, the protocol the writing of</p>	<p>1 discussions. 2 THE WITNESS: Yes, so calls, we did calls. 3 BY MR. HEGARTY: 4 Q. And what were the -- what did you discuss with the 5 attorneys for Beasley Allen or the plaintiffs during 6 those calls with regard to the experiments you were 7 doing or the writing of the manuscript or the 8 submission of the journal? 9 MS. O'DELL: I'm going to instruct you not to 10 answer that question. 11 MR. HEGARTY: We object to that instruction 12 and believe that that is an inappropriate objection and 13 instruction that's not covered by the consultant 14 privilege, but we're not going to decide it here, 15 understand that, but I just want to make it clear on 16 the record that we don't agree that your objection 17 covers the kind of communications that I asked the 18 doctor. 19 MS. O'DELL: Well, the privilege covers 20 communications, whether written or verbal, in person or 21 on the telephone, during Dr. Saed's consulting 22 relationship with the plaintiffs and that's what you've 23 asked him and that's what I'm objecting to. 24 MR. HEGARTY: I understand the objection. We 25 don't agree with the objection.</p>

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<p style="text-align: right;">Page 74</p> <p>1 MS. O'DELL: I want to make sure the record 2 is clear. 3 MR. HEGARTY: And I'm making for the record 4 that we don't agree with the objection and dispute the 5 propriety of it and object to you instructing the 6 doctor not to respond. With regard to this -- the work 7 we've been talking about, the pilot study with talc, 8 that's reflected in the -- and the other studies with 9 talc that's reflected in the two notebooks, have you 10 prepared any other manuscripts related to those 11 experiments that you intend to submit to any journal? 12 THE WITNESS: Other than submitted abstracts 13 to different meetings, no. 14 BY MR. HEGARTY: 15 Q. Have you prepared abstracts or do you intend to prepare 16 abstracts or have you submitted abstracts regarding the 17 work reflected in the two notebooks that have not yet 18 been disseminated? 19 A. Disseminated means -- 20 MS. O'DELL: Object to form. 21 BY MR. HEGARTY: 22 Q. Well, as we're going to look at here today, there are 23 some abstracts where you describe the work that you're 24 doing, the experiments that you did. Do you currently 25 have in the works any abstracts that have not yet been</p>	<p style="text-align: right;">Page 76</p> <p>1 MS. O'DELL: This is not your updated CV 2 actually, this is the one -- 3 THE WITNESS: I can find it for you. It's an 4 obstetrics and gynecology online, open access online. 5 BY MR. HEGARTY: 6 Q. Who within -- for that publication asked you to write 7 an editorial? 8 A. The editorial office. 9 Q. And when did that request come in? 10 A. I think two weeks ago. 11 Q. And editorial on what? 12 A. On talc and oxidative stress. 13 Q. Have you started writing it? 14 A. Not yet. 15 Q. Do you intend to do so? 16 A. Yes. 17 Q. Did they give you a date -- 18 A. No. 19 Q. -- for submission? 20 MS. O'DELL: Let him finish his question, 21 please, Doctor. 22 BY MR. HEGARTY: 23 Q. Did they give you a date for providing -- did they give 24 you a date for providing the editorial? 25 A. No.</p>
<p style="text-align: right;">Page 75</p> <p>1 published or provided to anyone? 2 MS. O'DELL: Object to the form. 3 BY MR. HEGARTY: 4 Q. Do you understand the question? 5 A. Not really. 6 Q. Well, do you currently have any abstracts that you're 7 working on that you intend to submit? 8 A. Now I understood. In relation to -- 9 Q. The experiments -- 10 A. In relation to the talc project? 11 Q. Correct. 12 A. The answer is no. 13 Q. Do you have any other written work in process relating 14 to the talc experiments that you intend to either turn 15 into an abstract or turn into a journal article? 16 A. I was asked to write an editorial to one of the 17 journals and I am planning to do that. 18 Q. Who asked you to write an editorial to a journal? 19 A. The journal. 20 Q. What journal? 21 A. OB-GYN, let me see, I can find the exact name for you, 22 which I'm planning to do. It's an open access journal 23 obstetrics and gynecology it's in my CV somewhere -- 24 trying to find it for you -- where is it -- this is my 25 updated CV?</p>	<p style="text-align: right;">Page 77</p> <p>1 Q. Is the editorial going to be in response to a journal 2 article or another publication? 3 A. It is in response to the published abstracts that I did 4 online. 5 Q. And with regard to the open access publication, is that 6 a publication that's only available on the internet? 7 A. Open access, yes. 8 Q. Is that a publication which you have to pay to have 9 your materials published on the internet? 10 A. All open access journals you have to pay, yes. 11 Q. You will have to pay to have your editorial published? 12 A. Yes. 13 Q. How much does that cost? 14 A. Not too much like, 3, \$400. 15 MR. LOCKE: Could we ask the witness to speak 16 up. 17 MS. O'DELL: They don't have access to a 18 speaker, so they're just listening to you over there, 19 so if you could raise your voice. 20 THE WITNESS: 4, \$500, 400 to 500 -- where is 21 that -- 22 MS. O'DELL: That's okay. 23 MR. HEGARTY: We're past that question, 24 Doctor. 25 THE WITNESS: Thank you.</p>

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<p>1 BY MR. HEGARTY:</p> <p>2 Q. We were provided some additional materials this morning</p> <p>3 that I wanted to make sure I mark for the record and</p> <p>4 follow up on a few things in those materials. I'm</p> <p>5 going to mark as Exhibit Number 10 what was represented</p> <p>6 to us today to be the index for the lab notebook that</p> <p>7 we marked as Exhibit Number 2, that's the notebook that</p> <p>8 has the experiments in it that went into your</p> <p>9 manuscript.</p> <p>10 SAED DEPOSITION EXHIBIT NUMBER 10,</p> <p>11 INDEX FOR LAB NOTEBOOK,</p> <p>12 WAS MARKED BY THE REPORTER</p> <p>13 FOR IDENTIFICATION</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. And I'll show you -- make sure we have the right lab</p> <p>16 note --</p> <p>17 MR. LAPINSKI: Counsel, is there an Exhibit 9</p> <p>18 marked?</p> <p>19 MR. HEGARTY: Oh, I skipped over Exhibit 9.</p> <p>20 I'll go back to it.</p> <p>21 THE WITNESS: So this and this.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Yes, you looked at Exhibit 2 compared to Exhibit 10.</p> <p>24 Is that the index to Exhibit 2?</p> <p>25 A. Yes.</p>	<p>1 A. That's the answer.</p> <p>2 Q. Let me look at the notebook. There are pages --</p> <p>3 there's 21 and then there is a 22, 23, and a 24 that's</p> <p>4 not referenced in the index. Why is that?</p> <p>5 A. Because those are figures. They could be referenced.</p> <p>6 Q. But they have page numbers on them.</p> <p>7 A. Sure.</p> <p>8 Q. And you otherwise list page numbers here that are also</p> <p>9 just pages that contained figures, correct?</p> <p>10 A. Correct.</p> <p>11 Q. Why are these pages not referenced in the index?</p> <p>12 A. I don't know.</p> <p>13 Q. There are also --</p> <p>14 A. Maybe --</p> <p>15 Q. I'm sorry.</p> <p>16 A. Maybe -- we have it, we labeled it.</p> <p>17 Q. But they're not included in the index.</p> <p>18 A. Maybe just missed here.</p> <p>19 Q. There are also a number of pages that have been cut out</p> <p>20 of Exhibit Number 2 that -- where the pages go from 24</p> <p>21 to 29, and there are clearly pages in between that</p> <p>22 appear to have either been cut out by a razor or by</p> <p>23 some other cutting instrument. First of all, what was</p> <p>24 on those pages?</p> <p>25 A. Okay, so as I mentioned earlier, we do not specify one</p>
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<p>1 Q. With regard to the index there, on the index, Doctor,</p> <p>2 Exhibit 10, the pages after 21 you jump to 31. What</p> <p>3 happened to Pages 22 to 29 -- I'm sorry, 22 to 30?</p> <p>4 MS. O'DELL: I'm sorry, are you referring to</p> <p>5 Exhibit 10 or --</p> <p>6 MR. HEGARTY: Yes, Exhibit 10, the pages go</p> <p>7 20-21, then jump to 31-32, and my question is where are</p> <p>8 Pages 22 to 30?</p> <p>9 THE WITNESS: 22, you said?</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Yes.</p> <p>12 A. 22, 23, 24, 29. Oh, so there's -- yeah, you talking</p> <p>13 about the tore apart?</p> <p>14 Q. We'll get to that part in a second. First of all, why</p> <p>15 aren't Pages 22 to 29 listed in the index or at least a</p> <p>16 portion of those?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: 31 -- 21 -- 21, 31, what</p> <p>19 happened, 21, yeah, there is nothing after that, right?</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. Well, on Exhibit Number 10 it jumps from 21 to 31, and</p> <p>22 where are the nine or ten pages in between those?</p> <p>23 A. Yeah, that's what I'm talking about, those are -- you</p> <p>24 want me to answer for the missing pages?</p> <p>25 Q. Well, I'll get to that first but --</p>	<p>1 lab notebook to a specific study. So my research</p> <p>2 technician by a mistake added a different project here,</p> <p>3 and because this is talc, there is a litigation and</p> <p>4 lawyers and all that, we had to remove it and we have</p> <p>5 to specialize in that lab notebook just for this work.</p> <p>6 Q. What other project was represented or documented in</p> <p>7 those pages that were removed from this lab notebook?</p> <p>8 A. It's a different project than talc.</p> <p>9 Q. What was the project or what is the project?</p> <p>10 MS. O'DELL: You mean the subject matter?</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. The subject matter.</p> <p>13 A. The same, reactive oxygen species, inflammation in</p> <p>14 ovarian cancer.</p> <p>15 Q. What are you looking at in that other project?</p> <p>16 A. I can't remember, but I can find out.</p> <p>17 Q. Does it involve exposure to any environmental</p> <p>18 particulate?</p> <p>19 A. No.</p> <p>20 Q. Do you know when the pages that we've been talking</p> <p>21 about were removed from this lab notebook?</p> <p>22 A. I don't remember.</p> <p>23 Q. Were you aware that they had been removed?</p> <p>24 A. Yes.</p> <p>25 Q. Have you ever in your experiences in conducting a lab</p>

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<p>1 cut out pages of a lab notebook?</p> <p>2 A. Have I ever done that? No.</p> <p>3 Q. That's not good laboratory practice, is it?</p> <p>4 MS. O'DELL: Objection to form.</p> <p>5 THE WITNESS: Yes, I -- the reason I told</p> <p>6 you, I just told you the reason why we did that.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. But my question is that's not proper laboratory</p> <p>9 practice to cut out pages of a lab book, is it?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: We didn't cut the notes from</p> <p>12 them, we just wanted to keep the talc study separate.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Understood, but I'm talking about good laboratory</p> <p>15 practices, and good laboratory practices don't sanction</p> <p>16 or allow for you to cut out pages of a laboratory</p> <p>17 notebook, do they?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: We, as you can see, we're not</p> <p>20 hiding it.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. I'm not asking if you're hiding it. I'm asking you, do</p> <p>23 you -- is it your testimony that cutting lab -- cutting</p> <p>24 pages out of a lab notebook is consistent with good</p> <p>25 laboratory practice?</p>	<p>1 Q. And Nicole King again is who?</p> <p>2 A. My research post doc.</p> <p>3 Q. Then on the other lab notebook that contained -- that</p> <p>4 was on Exhibit 2. Exhibit 3 on the outside is</p> <p>5 something called Temple 1. What does that mean?</p> <p>6 A. That's a project that we did for Temple Pharmaceutical</p> <p>7 in our lab.</p> <p>8 Q. That's a project that's -- that's the project that's in</p> <p>9 the first part of the lab notebook?</p> <p>10 A. Correct.</p> <p>11 SAED DEPOSITION EXHIBIT NUMBER 9,</p> <p>12 PILOT STUDY,</p> <p>13 WAS MARKED BY THE REPORTER</p> <p>14 FOR IDENTIFICATION</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Also provided today, which I'll mark as Exhibit</p> <p>17 Number 9, are copies of what I believe to be the pilot</p> <p>18 study that's contained in Exhibit Number 3. Would you</p> <p>19 look at Exhibit Number 9 and compare to Exhibit</p> <p>20 Number 3, and tell me whether Exhibit Number 9 are the</p> <p>21 pages copied from Exhibit Number 3, the pilot project</p> <p>22 we talked about earlier along with the index?</p> <p>23 A. Yes.</p> <p>24 Q. On the first page of -- or strike that. On Page 1 of</p> <p>25 Exhibit Number 2 there's a statement at the very</p>
Page 83	Page 85
<p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I didn't say that.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. You agree it's not consistent with good laboratory</p> <p>5 practice, don't you?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: I don't agree.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. You don't agree with what?</p> <p>10 A. Okay, I told you the reason why we removed those pages.</p> <p>11 Q. Did you instruct someone to cut those pages out of this</p> <p>12 notebook?</p> <p>13 A. My lab research assistant was doing different project.</p> <p>14 She was writing it here in the middle of this lab</p> <p>15 notebook. I asked her let's remove it, continue so we</p> <p>16 can keep this lab notebook independent.</p> <p>17 Q. But the other lab notebook you prepared you left in the</p> <p>18 pages of the other project, you didn't cut those out,</p> <p>19 correct?</p> <p>20 A. No, because this was a preliminary results and that was</p> <p>21 continued, not in the middle, it was continued, so we</p> <p>22 only used like few pages from the book.</p> <p>23 Q. The lab notebooks contain on the outside, at least one</p> <p>24 of them, Nicole King Talc Study, do you see that?</p> <p>25 A. I do.</p>	<p>1 beginning that says tried to dissolve talc Fisher 74 --</p> <p>2 or Fisher T4-500 lot numbers 166820 in Johnson &</p> <p>3 Johnson Baby Powder. Do you see that reference? Do</p> <p>4 you see where I'm reading?</p> <p>5 A. You're reading wrong. What is in?</p> <p>6 Q. In.</p> <p>7 A. That's not in.</p> <p>8 Q. What is that word?</p> <p>9 A. That's or.</p> <p>10 Q. Or Johnson's Baby Powder, okay, and it says it won't</p> <p>11 completely dissolve. What does that mean?</p> <p>12 A. It won't completely dissolve.</p> <p>13 Q. What was the extent of its -- that it dissolved?</p> <p>14 A. Partial.</p> <p>15 MS. O'DELL: Object to form.</p> <p>16 THE WITNESS: Yeah, so, okay, so you need to</p> <p>17 know the percentage of how much it's dissolved?</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. How much is dissolved as reflected in Page 1.</p> <p>20 A. Nothing dissolved.</p> <p>21 Q. Whose handwriting is on Page 1?</p> <p>22 A. This is Nicole I think, I think.</p> <p>23 Q. Whose handwriting is throughout Exhibit Number 2?</p> <p>24 A. This?</p> <p>25 Q. Throughout the exhibit.</p>

22 (Pages 82 to 85)

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<p style="text-align: right;">Page 86</p> <p>1 A. Some Nicole, some others, my research assistant.</p> <p>2 Q. Who else's handwriting besides Nicole's are in Exhibit</p> <p>3 Number 2?</p> <p>4 A. My research assistant.</p> <p>5 Q. Who is that?</p> <p>6 A. Flory, her name is Flory, Flory Rong, I think she's</p> <p>7 part of the authors, yes, her name is, okay, this is</p> <p>8 the right -- correction, Fan Rong.</p> <p>9 MS. O'DELL: How do you spell that?</p> <p>10 THE WITNESS: It's here, F-a-n and then</p> <p>11 R-o-n-g.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Isn't it Rong Fan, Doctor?</p> <p>14 A. Rong Fan? The first name is --</p> <p>15 Q. First name is Rong, right?</p> <p>16 A. I think it's the other way around, I'm not expert on</p> <p>17 names.</p> <p>18 Q. Who is Mr. Rong?</p> <p>19 A. Mrs.</p> <p>20 Q. Mrs. Rong who is that?</p> <p>21 A. She is my research assistant.</p> <p>22 Q. How long has she been your research assistant?</p> <p>23 A. From I believe the beginning of '18.</p> <p>24 Q. But you don't know her name?</p> <p>25 A. I know her name, Flory, we call her Flory.</p>	<p style="text-align: right;">Page 88</p> <p>1 Q. Does that mean there could be instances where work was</p> <p>2 done on that date but then entered later in the lab</p> <p>3 notebook?</p> <p>4 A. Okay, so let me explain how we do this. So we run our</p> <p>5 experiments and we have everything, as you see here,</p> <p>6 electronically, and we -- it's a matter of -- practice</p> <p>7 of cutting and pasting it in the lab notebook, but</p> <p>8 everything is done in electronically.</p> <p>9 Q. When was this lab notebook, Exhibit Number 2, prepared?</p> <p>10 A. I don't know, exact dates?</p> <p>11 Q. Correct.</p> <p>12 A. I don't know, I can't remember.</p> <p>13 Q. Well, the date -- the dates run from 10-15-17 to --</p> <p>14 A. All the way to --</p> <p>15 Q. All the way to --</p> <p>16 A. -- October.</p> <p>17 Q. -- October or so of 2018. So was this notebook</p> <p>18 prepared over that entire period of time?</p> <p>19 A. Yes.</p> <p>20 Q. It wasn't prepared, put together in its entirety four</p> <p>21 weeks ago?</p> <p>22 A. Some of it was, yes.</p> <p>23 Q. What portions were put together four weeks ago?</p> <p>24 A. I think the one related to the last portion.</p> <p>25 Q. Can you point to me the pages that were put together in</p>
<p style="text-align: right;">Page 87</p> <p>1 Q. What's her full name?</p> <p>2 A. This is her full name, how she officially write, it's</p> <p>3 on the paper.</p> <p>4 Q. And is it -- according to you, is her name Fan Rong?</p> <p>5 A. I call her Flory.</p> <p>6 Q. Do you know her name?</p> <p>7 A. That's her name.</p> <p>8 Q. And how do you pronounce it?</p> <p>9 A. Rong Fan, I never called her with this name.</p> <p>10 Q. Who else's handwriting is contained in Exhibit</p> <p>11 Number 2?</p> <p>12 A. Some would be mine.</p> <p>13 Q. Who else?</p> <p>14 A. That's it.</p> <p>15 Q. Were all the entries in Exhibit Number 2 prepared at</p> <p>16 the time that the work was done?</p> <p>17 A. No.</p> <p>18 Q. When you say no, does that mean that there was work</p> <p>19 done and then the -- later on entries were made in the</p> <p>20 lab notebook?</p> <p>21 A. Correct.</p> <p>22 Q. How much later -- strike that. If the entries have a</p> <p>23 certain date on them, does that mean that they were</p> <p>24 entered on that date or the work was done on that date?</p> <p>25 A. Work was done on that date.</p>	<p style="text-align: right;">Page 89</p> <p>1 the last month or so?</p> <p>2 A. I can't really exactly remember, but the last, I would</p> <p>3 say, the statistical part for sure.</p> <p>4 Q. Starting on what page?</p> <p>5 A. I'm trying to find it. So starting on Page 114, this</p> <p>6 is the statistics of the study, all the way to 19 --</p> <p>7 122, 124, so all the way to the end, which is 124.</p> <p>8 This part, it's created by or done by a</p> <p>9 biostatistician, and this is all you can see</p> <p>10 electronics, so we just cut and pasted there.</p> <p>11 Q. So if you go to Page 114, that has a date of October 6,</p> <p>12 2018. Is it your testimony that this was not prepared</p> <p>13 on that date but was prepared later and then back dated</p> <p>14 to say October 6, 2018?</p> <p>15 MS. O'DELL: Object to the form, misstates</p> <p>16 his testimony.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. You can answer.</p> <p>19 MS. O'DELL: If you understand the question.</p> <p>20 THE WITNESS: What's the question?</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. Sure. You see the date at the top of that page of</p> <p>23 October 6, 2018, correct?</p> <p>24 A. Correct.</p> <p>25 Q. Was this page prepared on that date or was it prepared</p>

23 (Pages 86 to 89)

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<p style="text-align: right;">Page 90</p> <p>1 at a time later than that but dated October 6, 2018?</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: Okay, so this -- I can't</p> <p>4 remember when we did the statistics, but this date</p> <p>5 reflects when the statistics was actually done.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. So in this instance, the statistics were done on</p> <p>8 October 6, 2018, but was the page prepared later than</p> <p>9 that after October 6, 2018?</p> <p>10 A. The pages, yes.</p> <p>11 Q. With regard to other entries in the notebook that have</p> <p>12 dates, can you tell whether those pages were created on</p> <p>13 the date listed on the page or were they created later</p> <p>14 but backdated to the date the work occurred?</p> <p>15 MS. O'DELL: Objection to form.</p> <p>16 THE WITNESS: Yeah, so, again, we do the</p> <p>17 experiment, sometimes it takes a week or two to write</p> <p>18 it in the notebook because we have the data</p> <p>19 electronically, so I cannot tell you the exact date</p> <p>20 when they were put in.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. All the data that is reflected in Exhibit Number 2 is</p> <p>23 kept in electronic format?</p> <p>24 A. Yes.</p> <p>25 Q. Does that electronic format still exist?</p>	<p style="text-align: right;">Page 92</p> <p>1 January 2018, and I'll direct you to Page --</p> <p>2 A. 51.</p> <p>3 Q. Page 53.</p> <p>4 A. Of this notebook?</p> <p>5 Q. Of the notebook.</p> <p>6 A. So one more time, the question.</p> <p>7 Q. Turn to Page 53 of Exhibit Number 2.</p> <p>8 A. 53?</p> <p>9 Q. Yes.</p> <p>10 A. Okay.</p> <p>11 Q. There's a couple dates at the top of January 3rd, 2018</p> <p>12 and, also, do you see January 7, 2018 at the top?</p> <p>13 MS. O'DELL: Excuse me, Mark, what Bates</p> <p>14 Number?</p> <p>15 MR. HEGARTY: I'm looking at -- I'm using the</p> <p>16 page numbers in the lower right-hand corner.</p> <p>17 THE WITNESS: 53?</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. 53.</p> <p>20 A. On this date?</p> <p>21 Q. Yes, 1-7-18. What I'm trying to find out is when was</p> <p>22 the first date that you did --</p> <p>23 MS. O'DELL: What's the Bates Number on the</p> <p>24 document?</p> <p>25 MR. HEGARTY: The Bates Number is 25.</p>
<p style="text-align: right;">Page 91</p> <p>1 A. Yes.</p> <p>2 Q. Is the data in that electronic format all dated and is</p> <p>3 the date the date the data was generated?</p> <p>4 MS. O'DELL: Objection to form.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. You're pointing to an example.</p> <p>7 A. An example.</p> <p>8 Q. What page is that on?</p> <p>9 A. June 19.</p> <p>10 Q. What page is that on, Doctor?</p> <p>11 A. This is Page -- oh, no, that's -- which page was</p> <p>12 this --</p> <p>13 Q. It's in the lower right-hand corner.</p> <p>14 A. I just noticed -- no, it's this one. Like, for</p> <p>15 example, if you find the dates that are here, these</p> <p>16 dates reflect the time we did the experiment.</p> <p>17 Q. Can you stop at a page and give me an example?</p> <p>18 A. I'm trying to find one. So this is February --</p> <p>19 Page 73, if you look here, it says February -- so</p> <p>20 small, February 20th, is that --</p> <p>21 Q. Yes, 2018.</p> <p>22 A. Right. So that's the date, and that's the date that is</p> <p>23 this experiment performed.</p> <p>24 Q. With regard to the experiments that you did for your</p> <p>25 manuscript, did those experiments begin in</p>	<p style="text-align: right;">Page 93</p> <p>1 MS. O'DELL: Okay.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. When is the first date that you started the -- when did</p> <p>4 you start the experiments that you then report in your</p> <p>5 manuscript?</p> <p>6 A. It says right there, January 3rd we seeded the cells,</p> <p>7 started the experiment.</p> <p>8 Q. If you go to Page 2 using the Bates -- let me switch</p> <p>9 you over to the Bates Numbers because that's what I had</p> <p>10 to work from.</p> <p>11 A. Okay.</p> <p>12 Q. Let me show you Exhibit Number 1, that's a copy of the</p> <p>13 notebook that we've been looking at, Exhibit Number 2.</p> <p>14 A. Okay. Page 2?</p> <p>15 Q. Look at Page 2 of Bates Number --</p> <p>16 MS. O'DELL: When he says Bates Number, he's</p> <p>17 referring to the very small number to the right-hand</p> <p>18 side that's been -- yes --</p> <p>19 THE WITNESS: Where does it say Page 2? Oh,</p> <p>20 sorry, okay. Page 2?</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. Yes, and that has a date of January 24, 2018?</p> <p>23 A. Yes.</p> <p>24 Q. Do you see that?</p> <p>25 A. Yes.</p>

24 (Pages 90 to 93)

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<p style="text-align: right;">Page 94</p> <p>1 Q. Then if you go through the next several pages through 2 to Page 23 by Bates Number -- 3 A. Yes. 4 Q. -- that's dated March 2nd, 2018. Do you see that? 5 A. Yes. 6 Q. Then if you go to Page 25, I'm sorry, if you go to 7 Page 53 -- 8 A. It's January 7. 9 Q. Well, then you go Page 25 you see January 7, which is 10 not in the same order. So the book doesn't appear to 11 be in chronologic order, is that correct? 12 A. Okay, let me answer this. Here is the answer. So we 13 have sections, this is a PCR section, we left some 14 pages blank, next section is ELISA section, because 15 we're doing the experiments simultaneously, so we 16 wanted to separate each section, so the PCR section we 17 created, we designated certain pages, and then we have 18 ELISA section, and then we have other sections. So 19 every time we do the experiment, we add to the section. 20 That's why the dates are not in chronological order. 21 Q. Okay. If you look at Bates Number 78, Doctor, that 22 page is dated June 29, 2018? 23 A. This one? 24 Q. Yes. 25 A. Yes.</p>	<p style="text-align: right;">Page 96</p> <p>1 BY MR. HEGARTY: 2 Q. Sure. As we just looked at, the graphs are all -- and 3 tables and charts are all dated, correct? 4 A. Correct. 5 Q. Were they added to the notebook at the time they were 6 created or were they added later? 7 A. Which graph you referring to? 8 Q. Any of the tables where the -- that have been pasted 9 in, were they pasted in at the time they were created 10 or later? 11 MS. O'DELL: Object to the form, asked and 12 answered. 13 THE WITNESS: So you are saying if this graph 14 was created the same time that -- 15 BY MR. HEGARTY: 16 Q. We're looking at Page 87, and you're pointing to a 17 graph, and my question is with regard to the graph, was 18 it pasted in the notebook on the day it was generated? 19 MS. O'DELL: Objection, asked and answered. 20 THE WITNESS: I really can't remember, but we 21 have this electronically. 22 BY MR. HEGARTY: 23 Q. Doctor, if you go to Page 4, Bates Number 4, which 24 corresponds to Page 33 of the notebook -- 25 A. This?</p>
<p style="text-align: right;">Page 95</p> <p>1 Q. See that date? 2 A. I imagine it better if I see the notebook. 3 Q. Then if you turn over to Bates 86. 4 A. 86. 86 that's a different section. 5 Q. Okay. There's a date on there of September 4, 2018, 6 looked like there was a break between June 29th and 7 September 4. 8 A. Look at the original here, see that's a section, it's a 9 different section. 10 Q. To the extent that there are periods of time where 11 there is no activity going on, that there might be a 12 month between data entries, does that mean that there's 13 no work going on at that time? 14 A. No, no, no, we do simultaneously different, like we do 15 PCR, we do ELISA, we do proliferation, all that 16 studies, and we divided this notebook into sections, 17 and as we go, we added to the corresponding section, so 18 you can -- yeah. 19 Q. And were all the graphs in the notebook provided at a 20 later time or were they provided at the time they were 21 created? 22 MS. O'DELL: Objection to form. 23 THE WITNESS: Yeah, I don't really understand 24 the question. 25</p>	<p style="text-align: right;">Page 97</p> <p>1 Q. -- there appears to be a reference on Page 33 that 2 says go to Page 35. Do you see that? 3 A. Okay. 4 Q. How can you know to go to Page 35 when you're on 5 Page 33 and 35 is not yet created? 6 A. Oh, okay, good question. So this is established 7 protocol, we do this -- this is not like the first time 8 we're doing this, this is done repeatedly over years 9 and years and years with different publication. This 10 is the setup how we write it, so this is like something 11 we predicting to happen, this we already know, that's 12 the protocol, we just sticking it here. 13 Q. You're anticipating that when you prepare -- strike 14 that. When you prepared Page 33, you're anticipating 15 that you were going to -- 16 A. Discuss it. 17 Q. -- discuss it in Page 35? 18 A. Yes. 19 Q. Are the page numbers that you've added at the bottom in 20 handwriting, are those made in the beginning of the 21 work or are they added as you go? In other words, do 22 you start with a notebook that's blank and then just 23 simply number the pages before you start the work or 24 you do it after the fact? 25 A. We do it both ways, I don't remember.</p>

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<p style="text-align: right;">Page 98</p> <p>1 Q. There's -- the writing I pointed to is in blue ink 2 versus the other writing, which is in black ink. Was 3 that blue ink added at the time that 33 was created or 4 was it added later? 5 A. I don't remember. 6 Q. Do you know whose handwriting -- 7 A. Yeah, this is Rong -- what's her name, Mrs. Rong. 8 Q. Okay. If you look again back at Page 4 of the Bates 9 Stamped copy. 10 A. Page 4. 11 Q. That's Exhibit Number 1. 12 A. Same page, 4? That's 4. 13 Q. Same Page 4, which is Page 33 of the lab notebook, 14 okay? 15 A. Same page. 16 Q. There is a portion of that notebook page that is whited 17 out, correct, and written over? 18 A. Yeah, I see that. 19 Q. What was whited out? 20 A. (Shrugs shoulders.) 21 Q. Do you know? 22 A. I don't know. Again, this is an established procedure 23 that had been published with several, 100 papers over. 24 Q. Well, what established procedure can you cite me to 25 that says that it's proper laboratory practice to white</p>	<p style="text-align: right;">Page 100</p> <p>1 BY MR. HEGARTY: 2 Q. That's not proper laboratory practice, is it? 3 A. No. What I said is really simple. She probably did a 4 mistake and then she whited out and wrote over it. 5 Q. Proper laboratory practice is to line through it so the 6 information that was there is still visible, and then 7 include the data somewhere else so everything is 8 transparent, correct? 9 MS. O'DELL: Object to the form. 10 THE WITNESS: The information that she whited 11 out has nothing to do with the results or anything. 12 This is just describing an established methodology that 13 is published in all of our papers. 14 MR. KLATT: Objection, form, unresponsive. 15 MR. HEGARTY: Understood, but the proper 16 laboratory practice would be to line through it so it 17 could still be visible, and then add the corrected or 18 additional information, correct? 19 MS. O'DELL: Object to the form. 20 THE WITNESS: My response, as I told you, 21 this is something that she probably misspelled or 22 mistake she did, she thought she was doing something, 23 writing something, she wrote different, you know, we're 24 doing different experiment different time, same times. 25 MR. KLATT: Objection, form, nonresponsive.</p>
<p style="text-align: right;">Page 99</p> <p>1 out information and then write over it? 2 MS. O'DELL: Object to the form. 3 THE WITNESS: If you like write something 4 like a mistake or a typo and you write it over. 5 BY MR. HEGARTY: 6 Q. Can you cite for me any -- 7 A. Cite? 8 Q. -- published guidelines or laboratory methods that say 9 that that's a proper approach to preparing a lab 10 notebook? 11 MS. O'DELL: Objection to form. 12 THE WITNESS: Yeah, umm, what we did here I 13 think -- this is her handwriting and -- 14 MS. O'DELL: When you say "her," who are you 15 referring to? 16 THE WITNESS: Rong, Mrs. Rong, so nothing 17 really that alarmed me or directed my attention to 18 anything. She wrote what she supposed to write. Maybe 19 she did a mistake. 20 BY MR. HEGARTY: 21 Q. Doctor, would you ever in preparing a lab notebook 22 white out information that's been written in a lab 23 notebook and then write over it? 24 MS. O'DELL: Object to the form. 25 THE WITNESS: Typically I don't do that, no.</p>	<p style="text-align: right;">Page 101</p> <p>1 BY MR. HEGARTY: 2 Q. Doctor, listen to my question. The proper laboratory 3 practice would be to line through what she whited over 4 so that it would still be visible, and then add 5 whatever other information she wanted to add to this 6 page, correct? 7 A. If it's related to data. 8 Q. So this is not proper, this whiting out is not proper 9 laboratory practice, correct? 10 MS. O'DELL: Let him finish his question, and 11 give me a moment to object. Object to the form. 12 You may answer if you remember his question. 13 THE WITNESS: What I am trying to tell you, 14 if it's something to do with data it is not proper to 15 do, but this is -- this even shouldn't be in the 16 notebook, we can reference that, it is something that 17 we do in our laboratory so we can be detailed, it's 18 about the procedure, the method, which is already 19 published. 20 BY MR. HEGARTY: 21 Q. But good laboratory practice -- 22 A. It has nothing to do -- 23 Q. Let me finish, Doctor -- good laboratory practice, 24 whether it's data or otherwise, dictates that you not 25 white out any information that's put in a lab notebook;</p>

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<p>1 rather, you're to line through it so it's still</p> <p>2 visible, correct?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I just told you what I feel.</p> <p>5 This is an established method, it's nothing to do with</p> <p>6 the data, this is just describing standard methodology,</p> <p>7 with it or without it, doesn't change anything.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. So are you okay or fine with the whiting out of</p> <p>10 information in this lab notebook as was done here?</p> <p>11 MS. O'DELL: Objection to form.</p> <p>12 THE WITNESS: What I'm -- am I fine with</p> <p>13 that?</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Yes.</p> <p>16 A. I prefer that does not happen, but it happened and she</p> <p>17 did it, but that doesn't change anything.</p> <p>18 Q. Above that whited out area there's an arrow pointing to</p> <p>19 100 milligrams talc, after the arrow it says Johnson</p> <p>20 Baby Powder. Do you see where I'm referring to,</p> <p>21 Doctor?</p> <p>22 A. Yes.</p> <p>23 Q. Whose handwriting is that?</p> <p>24 A. I think it's Flory.</p> <p>25 Q. Was that information added later than the time this</p>	<p>1 that. Do you see that?</p> <p>2 A. I do.</p> <p>3 Q. Whose handwriting is reflected by the addition of</p> <p>4 Johnson & Johnson, et cetera?</p> <p>5 A. I think it's Flory, Rong.</p> <p>6 Q. What was under -- what did she write over?</p> <p>7 A. I don't know, I wasn't there when she wrote this, but</p> <p>8 when I looked at it I confirmed that this is what we</p> <p>9 did.</p> <p>10 Q. Well, did she write over Fisher Scientific talc?</p> <p>11 A. Could be.</p> <p>12 Q. But did you actually test Fisher Scientific talc</p> <p>13 instead of Johnson & Johnson and then alter the lab</p> <p>14 notebook?</p> <p>15 MS. O'DELL: Objection, form.</p> <p>16 THE WITNESS: We actually did both.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. You agree it's not proper practice, as reflected here,</p> <p>19 to white out information in a lab notebook where it</p> <p>20 can't be read and then write over it, correct?</p> <p>21 MS. O'DELL: Objection to form.</p> <p>22 THE WITNESS: You keep asking me the same</p> <p>23 question. I'm answering you the same way. She did the</p> <p>24 mistakes, to the best of her ability that's what she</p> <p>25 thought she will do, and I left it because I don't want</p>
Page 103	Page 105
<p>1 page was prepared?</p> <p>2 A. No.</p> <p>3 Q. Can you tell when that information was added to Page 33</p> <p>4 or Bates Number Page 4?</p> <p>5 MS. O'DELL: Objection to the form.</p> <p>6 THE WITNESS: When we prepared the page.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Why was it added in a way that put it out of order and</p> <p>9 had to have a line directing it to another part of the</p> <p>10 page?</p> <p>11 A. That's what we did.</p> <p>12 Q. Why was it not included there in the first place?</p> <p>13 MS. O'DELL: Objection, asked and answered.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. You don't know?</p> <p>16 A. I don't know.</p> <p>17 Q. If you look next at Bates Stamp Page 25, which is</p> <p>18 Page 53 of the lab notebook, there is another portion</p> <p>19 that has been whited out and written over. Do you see</p> <p>20 that?</p> <p>21 A. Yes, I see it.</p> <p>22 Q. What was whited out?</p> <p>23 A. I don't know.</p> <p>24 Q. Something was whited out and the name Johnson & Johnson</p> <p>25 number 30027477 lot number 13717RA was written over</p>	<p>1 to change it.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Did you talk to her about the propriety of whiting out</p> <p>4 data?</p> <p>5 A. Yes, I did.</p> <p>6 Q. What did you tell her?</p> <p>7 A. I said we should not white out just write underneath</p> <p>8 it.</p> <p>9 Q. When did you have that discussion with her?</p> <p>10 A. After I saw this.</p> <p>11 Q. When did you see it?</p> <p>12 A. I think -- I don't remember.</p> <p>13 Q. Did you see it in the last two weeks?</p> <p>14 A. No, no, no, way before.</p> <p>15 Q. Is it proper methodology for creating -- for doing</p> <p>16 experiments and creating a lab book to white -- start</p> <p>17 over. Is it proper methodology in doing experiments</p> <p>18 like this in creating the lab book that corresponds</p> <p>19 with those experiments to white out information and</p> <p>20 then write over it?</p> <p>21 MS. O'DELL: Objection to form.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. In your opinion?</p> <p>24 MS. O'DELL: Objection to form.</p> <p>25 THE WITNESS: So I just told you we did</p>

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<p style="text-align: right;">Page 106</p> <p>1 not -- with the information that is here is accurate, 2 we voluntarily did that. 3 BY MR. HEGARTY: 4 Q. I'm not asking you if the information is accurate with 5 my question. My question is, is it proper methodology 6 in doing experiments like this and in creating the lab 7 notebook that corresponds to those experiments to white 8 out information and write over it, in your opinion? 9 MS. O'DELL: Object to the form. 10 THE WITNESS: I mean it's -- in my personal 11 opinion? 12 BY MR. HEGARTY: 13 Q. Correct. 14 A. I think if you report that this is what actually 15 happened and a mistake happened and this is, to her 16 knowledge, this is the best way to handle it, she 17 handled it. 18 Q. So you consider the -- 19 A. And I talked to her about it and -- 20 Q. Do you consider the way she handled it to be proper 21 laboratory methodology? 22 A. That's why I told you, I talked to her about it so I 23 don't. 24 Q. May I see the notebook? 25 A. Sure.</p>	<p style="text-align: right;">Page 108</p> <p>1 MS. O'DELL: Object to form. 2 THE WITNESS: I didn't cover it, I just 3 showed it to you. 4 BY MR. HEGARTY: 5 Q. I'm talking about in the creation of a lab book, 6 though, is it considered proper methodology to take a 7 printout from a test and paste over text in the lab 8 notebook? 9 MS. O'DELL: Object to the form. 10 THE WITNESS: I just told you. So my answer 11 is the information that she decided to hide this that 12 you're talking about is an established methodology in 13 my lab that doesn't even need to be here. She chose 14 to just -- over it for a space limitation, that's all, 15 but it's not hidden, you can see it. 16 BY MR. HEGARTY: 17 Q. Thank you. 18 A. If we hide it, we can -- we don't have to have it 19 there. 20 Q. That information, though, was not photocopied and 21 provided to us in advance of the deposition, correct? 22 A. What information? 23 Q. The information that was covered by that chart. 24 MS. O'DELL: Object to the form. 25 THE WITNESS: I know, I see, there is no</p>
<p style="text-align: right;">Page 107</p> <p>1 Q. Doctor, I'm looking at Page 102 of the notebook, 2 Exhibit Number 2, which is Bates 78. If you want to 3 look at it -- 4 A. Okay, yes, I see it. 5 Q. -- either in Exhibit 1 or Exhibit 2. There appears to 6 be something that has been covered over by the table 7 that's been pasted there because I see some handwriting 8 on the far right-hand column, and I don't want to pull 9 that up, but what is under that table or that chart? 10 A. The answer is I don't know. But I'll find out. It's a 11 description of the method. 12 Q. I just want to note for the record that the doctor is 13 pulling the table up and -- 14 A. Yeah. 15 Q. Okay. 16 A. Do you want to see what's written under? 17 Q. Yes. 18 A. Okay. I want to see, also. Okay. So this is just the 19 oligonucleotide primers and the cyclin for the PCR, 20 this is very standard protocol that you don't need to 21 even show, it's a methodology, so it doesn't really 22 need to even show that. 23 Q. So, in your opinion, is it proper laboratory practice 24 in creating a lab book to cover up information that's 25 included in a lab book by a table or a chart?</p>	<p style="text-align: right;">Page 109</p> <p>1 information covered by that chart, that is not needed 2 to be there. 3 BY MR. HEGARTY: 4 Q. But there is information that's been covered, correct? 5 MS. O'DELL: Object to the form. 6 THE WITNESS: I answered, I said there is not 7 relevant information that is covered, intentionally 8 covered. 9 BY MR. HEGARTY: 10 Q. Over on Page 103 of Exhibit Number 2, Bates Number 79, 11 there is another or other words that have been whited 12 out. What are those other words? 13 MS. O'DELL: Object to the form. 14 THE WITNESS: I mean I can read the word. 15 BY MR. HEGARTY: 16 Q. What is the word? 17 A. It says sample something. 18 Q. Why was that whited out? 19 A. Maybe it doesn't belong here. 20 Q. Do you know why it was whited out? 21 A. I think it doesn't belong here. 22 Q. Who whited it out? 23 A. Flory. 24 Q. Is that whiteout okay to you in terms of doing a 25 proper -- having a proper methodology for preparing a</p>

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<p style="text-align: right;">Page 110</p> <p>1 lab notebook?</p> <p>2 MS. O'DELL: Objection to the form.</p> <p>3 THE WITNESS: I prefer without it but it's</p> <p>4 what it is.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Doctor, would you look at Exhibit Number 1 at Bates</p> <p>7 Stamp 57, please.</p> <p>8 A. Exhibit Number -- this is --</p> <p>9 Q. Yes, what you have in front of you.</p> <p>10 A. 57?</p> <p>11 Q. Correct. That corresponds to Page 84 of the lab</p> <p>12 notebook. There is now in the lab notebook a table</p> <p>13 that is pasted there that appears to have been removed</p> <p>14 from the page that we received that was photocopied and</p> <p>15 is part of Exhibit Number 1. Can you explain why our</p> <p>16 copy does not include that table?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: No idea.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Okay.</p> <p>21 A. But it's here.</p> <p>22 Q. Well, do you know what else --</p> <p>23 A. This is this.</p> <p>24 Q. Do you know what other charts were removed from the</p> <p>25 copy that we received?</p>	<p style="text-align: right;">Page 112</p> <p>1 someone to copy this notebook?</p> <p>2 A. To scan the notebook.</p> <p>3 Q. Who did you instruct to do that?</p> <p>4 A. Flory, my research assistant.</p> <p>5 Q. And did you instruct her to remove this table on</p> <p>6 Page 84?</p> <p>7 A. Absolutely not.</p> <p>8 Q. Do you know why it's not there?</p> <p>9 A. No idea, but the marks of this one are showing, and the</p> <p>10 graph is showing, so this should show up, I don't know</p> <p>11 why it's not showing up.</p> <p>12 Q. I'm going to direct you to Bates Stamp Page 62.</p> <p>13 A. Same thing.</p> <p>14 Q. Which is -- which corresponds to handwritten Page</p> <p>15 Number 87, there again is a chart --</p> <p>16 A. You referring to this one or this one?</p> <p>17 Q. I'm referring to 87, there again in the copy portion at</p> <p>18 the upper part of the page there is a table or a chart</p> <p>19 that is not included in the copy we've been given. Do</p> <p>20 you know why that is the case?</p> <p>21 MS. O'DELL: Objection to the form.</p> <p>22 THE WITNESS: So I think this is probably</p> <p>23 technical through scanning, I have no idea the answer</p> <p>24 is.</p> <p>25</p>
<p style="text-align: right;">Page 111</p> <p>1 A. No one removed anything.</p> <p>2 MS. O'DELL: Excuse me, when you say this is</p> <p>3 this, I don't know that that's clear on the record</p> <p>4 because you're pointing to the notebook.</p> <p>5 THE WITNESS: This is the results and this is</p> <p>6 the graph from the results.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Well, can you explain to us if this page was copied and</p> <p>9 included in Exhibit Number 1, why this chart is not in</p> <p>10 Exhibit Number 1?</p> <p>11 A. No idea.</p> <p>12 Q. You agree that --</p> <p>13 A. When we scanned it probably didn't show up, I don't</p> <p>14 know.</p> <p>15 Q. Well, you would agree that it would had to have been</p> <p>16 removed, correct; otherwise it would appear on the</p> <p>17 paper?</p> <p>18 A. I don't agree.</p> <p>19 Q. Well, you can tell on the copy that there are places</p> <p>20 there that look like where tape had appeared, correct?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: So same thing here, tape</p> <p>23 appeared and it's there.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Did you instruct -- strike that. Did you instruct</p>	<p style="text-align: right;">Page 113</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Then under --</p> <p>3 A. But we do have all the data.</p> <p>4 Q. Under that table there appears to be some very vague</p> <p>5 what appears to be handwriting. Can you explain what</p> <p>6 that is? That again is on Bates Stamp 62, Page 87 of</p> <p>7 the original lab notebook.</p> <p>8 A. I don't know what that is.</p> <p>9 Q. Doctor, is this lab notebook typical of the lab</p> <p>10 notebooks you generate for all the experiments you've</p> <p>11 conducted?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: What do you mean by typical?</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Well, is this -- the things we've talked about here</p> <p>16 this morning, would those same things appear in all the</p> <p>17 lab notebooks that you prepare as part of your</p> <p>18 experiments?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: So for -- most of our</p> <p>21 experiments are documented in a lab notebook like this.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Do most of your experiments -- strike that -- do most</p> <p>24 of the notebooks of your experiments have whiteout in</p> <p>25 them?</p>

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<p style="text-align: right;">Page 114</p> <p>1 A. Oh, that's what you're saying?</p> <p>2 Q. Yes.</p> <p>3 A. No.</p> <p>4 Q. Have you ever seen one of your other notebooks for your</p> <p>5 lab experiments have whiteout in them and handwriting</p> <p>6 over that whiteout?</p> <p>7 A. It's not a general practice. The answer is I don't</p> <p>8 remember.</p> <p>9 Q. Does your lab have standard operating procedures for</p> <p>10 how a lab notebook is to be prepared?</p> <p>11 MS. O'DELL: Objection to the form.</p> <p>12 THE WITNESS: So from who? From our own lab?</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Correct.</p> <p>15 A. So this is the procedure that we follow for our lab.</p> <p>16 Q. Do you have any written standards on how you are to</p> <p>17 prepare a lab notebook?</p> <p>18 A. No.</p> <p>19 Q. Do you instruct those within your lab on how to prepare</p> <p>20 a lab notebook based on any published methods for</p> <p>21 preparing a lab notebook?</p> <p>22 A. So most of our work nowadays -- in the past we used to</p> <p>23 do a lot of lab notebooks, but most of the work that we</p> <p>24 do right now, most of it is electronically, and just to</p> <p>25 keep a record in case something happened to electronic</p>	<p style="text-align: right;">Page 116</p> <p>1 the laboratory notebooks we've been looking at today on</p> <p>2 how to prepare lab notebooks, correct?</p> <p>3 A. I instruct the lady who did this, yes, how to prepare</p> <p>4 lab notebook.</p> <p>5 Q. Did you ever instruct her about what to do in the case</p> <p>6 of needing to correct information that has been written</p> <p>7 in the lab notebook?</p> <p>8 A. Yes, she actually knows that because on, I already</p> <p>9 instruct her not to do the whiteout, she did it</p> <p>10 anyways, but her defense was, oh, I am only doing it on</p> <p>11 words that we already -- on procedures that is not even</p> <p>12 supposed to be there, it's like a normal practice</p> <p>13 procedure that we have done many times.</p> <p>14 Q. Doctor, if you would turn over to Bates Stamp 25 in</p> <p>15 Exhibit Number 1, which is Page 53 in the notebook.</p> <p>16 A. ELISA.</p> <p>17 Q. Under the -- in the section on the upper part of the</p> <p>18 page there appears to be documentation of adding talc</p> <p>19 to the cells; is that correct?</p> <p>20 A. Where do you see that? Cells were seeded, density --</p> <p>21 Q. Can I look at it, Doctor?</p> <p>22 A. Treat with --</p> <p>23 Q. This part of the notebook, what is described where</p> <p>24 you're talking about X1 X2 X3?</p> <p>25 A. Okay. These are the dilution of talc that we used, 5</p>
<p style="text-align: right;">Page 115</p> <p>1 version, we print it and paste it in the lab notebook.</p> <p>2 So in the past we used to take more precautions for lab</p> <p>3 notebooks, but these days because of this electronic</p> <p>4 facilities and help, we just print it and paste it</p> <p>5 there.</p> <p>6 Q. Did you instruct those who prepared the lab notebooks</p> <p>7 that we've been looking at here today on how to prepare</p> <p>8 laboratory notebooks? Did that instruction come from</p> <p>9 you?</p> <p>10 A. Yes.</p> <p>11 Q. Was that instruction based on any published standards</p> <p>12 in the literature for how to prepare a lab notebook?</p> <p>13 A. That was based on what I've been told since 1983.</p> <p>14 Q. Where were you taught that in 1983?</p> <p>15 A. I did my Ph.D. in molecular biology.</p> <p>16 Q. Where was that?</p> <p>17 A. Where?</p> <p>18 Q. Yes.</p> <p>19 A. England.</p> <p>20 Q. What school in England?</p> <p>21 A. University of Essex.</p> <p>22 Q. You learned at the University of Essex on how to</p> <p>23 prepare a laboratory notebook?</p> <p>24 A. Sure.</p> <p>25 Q. You used that training to instruct those who prepared</p>	<p style="text-align: right;">Page 117</p> <p>1 micrograms, 20 micrograms, and 100 micrograms. These</p> <p>2 are the three doses that we used, and this is how we</p> <p>3 got them.</p> <p>4 Q. With these doses are you adding DMSO?</p> <p>5 A. The talc was dissolved in DMSO.</p> <p>6 Q. Does the lab notebook show how much DMSO was used for</p> <p>7 each sample?</p> <p>8 A. How much DMSO? Yeah.</p> <p>9 Q. Yes. Where is that?</p> <p>10 A. Let me see. So you -- where is it -- it's</p> <p>11 50 milligrams per ml, so one ml, that's the initial</p> <p>12 concentration, 50 milligrams of the talc with one ml of</p> <p>13 the DMSO.</p> <p>14 Q. Did the amount of DMSO increase with the increasing</p> <p>15 doses of talc?</p> <p>16 A. No, no, no, no, okay, let me explain this.</p> <p>17 MS. O'DELL: What page were you referring to,</p> <p>18 Doctor?</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Thank you.</p> <p>21 A. The first page.</p> <p>22 Q. What's that page number?</p> <p>23 A. 1.</p> <p>24 Q. Page 1, okay.</p> <p>25 A. So let me explain this. So we prepare a stock solution</p>

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<p style="text-align: right;">Page 118</p> <p>1 of the talc powder plus DMSO, the solvent, which is</p> <p>2 50 milligrams per ml, you can upscale it, downscale it,</p> <p>3 from there we dilute, as you can see here, it says the</p> <p>4 exact delusions, and it says X1 times 10 to the 4th</p> <p>5 microgram per ml, that's what you want to get, and</p> <p>6 that's 15 ml times 5 micrograms per ml, that's the</p> <p>7 concentration desired, and then you take -- this will</p> <p>8 tell you how much volume you add to the cells. So we</p> <p>9 added 2.35 microliters that correspond to 5 micrograms</p> <p>10 per ml, 10 microliters corresponded to 20, and so on,</p> <p>11 50 corresponded to that, and then the untreated cells</p> <p>12 got that DMSO alone.</p> <p>13 MS. O'DELL: What page --</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. The DMSO at 2.5, 10, and 50?</p> <p>16 A. DMSO.</p> <p>17 Q. DMSO at 2.5, 10, and 50?</p> <p>18 MS. O'DELL: Excuse me, what page are you</p> <p>19 referring to?</p> <p>20 THE WITNESS: This Page 53 right here.</p> <p>21 No, so the DMSO has no concentration. The</p> <p>22 DMSO is the solvent where you dilute, dissolve the</p> <p>23 talc.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. My question is -- was, though, with regard to the</p>	<p style="text-align: right;">Page 120</p> <p>1 Does the assay work by you measuring the amount of</p> <p>2 color change?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: The answer -- I just answered</p> <p>5 you.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Which is?</p> <p>8 A. Are you referring to --</p> <p>9 Q. Well, explain how it works with regard to color.</p> <p>10 A. Okay, oh, I would love to, I'll be very happy to do</p> <p>11 that. Okay, so this is measuring the optical density</p> <p>12 of the concentration of the protein that is correlated</p> <p>13 to the -- how much protein is there. You measure the</p> <p>14 optical density absorbance at 5, 62 nanometer, and you</p> <p>15 construct a standard curve from BSA, and the standard</p> <p>16 curve is known concentration, and it tells you when</p> <p>17 it -- where is the absorption and what's the slope of</p> <p>18 the line, and that helps you extrapolate the unknown</p> <p>19 samples from your standard curve.</p> <p>20 Q. So is --</p> <p>21 A. It is a colorimetric assay.</p> <p>22 Q. It's measuring a color change, correct?</p> <p>23 A. No.</p> <p>24 Q. When you say colorimetric assay, what do you mean?</p> <p>25 A. It's extension coefficient, it measures BSA at specific</p>
<p style="text-align: right;">Page 119</p> <p>1 controls --</p> <p>2 A. Volumes, you use volumes.</p> <p>3 Q. -- did you, for each level of talc applied to the</p> <p>4 cells, for the corresponding controls did you also</p> <p>5 apply DMSO?</p> <p>6 A. Yes.</p> <p>7 Q. At what volume?</p> <p>8 A. It's 2.5, 10, and 50.</p> <p>9 Q. Of DMSO alone?</p> <p>10 A. Correct.</p> <p>11 Q. If you turn over to Page 55, I'm sorry, 53 in the lab</p> <p>12 notebook, which is Bates Stamped 27 in the copy</p> <p>13 version, Page 53.</p> <p>14 A. This one? Same page?</p> <p>15 Q. 55, Page 55 of the lab notebook, which is Bates Stamped</p> <p>16 27.</p> <p>17 A. Okay.</p> <p>18 Q. Is this -- does this page describe the BCA protein</p> <p>19 detection assay?</p> <p>20 A. Correct.</p> <p>21 Q. And does the assay work by measuring the amount of</p> <p>22 color change, that is, the more color change you</p> <p>23 detect, the greater the response it indicates?</p> <p>24 A. Are you saying it's a colorimetric assay?</p> <p>25 Q. Well, I'm not sure. I can ask it in a different way.</p>	<p style="text-align: right;">Page 121</p> <p>1 wavelength.</p> <p>2 Q. And what did you do to validate that the assay would</p> <p>3 work with the presence of talc?</p> <p>4 A. What assay?</p> <p>5 Q. This assay.</p> <p>6 A. This assay is not for talc, this assay is a standard</p> <p>7 curve to measure -- to use a standard for -- so we can</p> <p>8 apply the same amount of protein for each sample.</p> <p>9 Q. But you are using -- you are measuring the samples</p> <p>10 after they've been -- after talc has been applied,</p> <p>11 correct?</p> <p>12 A. We are measuring each like, for example, okay --</p> <p>13 MS. O'DELL: Refer to a specific page.</p> <p>14 THE WITNESS: Let's say, for example,</p> <p>15 catalase, so we are measuring catalase, but to measure</p> <p>16 catalase, you need to compare between samples, right?</p> <p>17 You need to compare between treated versus untreated.</p> <p>18 How are you -- how can you determine that you have the</p> <p>19 same amount of protein? What if you have more protein</p> <p>20 here than here? The results is not accurate. So we</p> <p>21 use BSA as a standard to measure and standardize all</p> <p>22 the samples to the same amount of protein, so the</p> <p>23 comparison would be -- the comparison would be</p> <p>24 accurate.</p> <p>25</p>

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<p style="text-align: right;">Page 122</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. How did you rule out the possibility that the color</p> <p>3 change or the wavelength change was due to the talc</p> <p>4 particles themselves as opposed to any effect they were</p> <p>5 having?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: Yeah, so we use the same cell</p> <p>8 line, we split the cells, we grow the cells, some cells</p> <p>9 get the talcum powder, the same cells, the other</p> <p>10 aliquot get no talcum powder, we extract proteins, we</p> <p>11 correct for the differences in the extraction of</p> <p>12 proteins, and then we run catalase, for example.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Within the proteins extracted, would there still be</p> <p>15 talc particles?</p> <p>16 A. No, no.</p> <p>17 Q. How do you know there are not talc particles?</p> <p>18 A. Because these are total proteins. You extract</p> <p>19 proteins. There is a process of extraction of</p> <p>20 proteins. You wash off all the media, you precipitate</p> <p>21 the cells, you lyse the cells, you extract proteins.</p> <p>22 Q. How many times did you repeat the experiment you just</p> <p>23 described for catalase?</p> <p>24 A. So all this work from January 24th till the end of this</p> <p>25 work, it's done in triplicate.</p>	<p style="text-align: right;">Page 124</p> <p>1 A. I am not measuring the protein, I'm measuring catalase.</p> <p>2 Q. You're measuring the catalase.</p> <p>3 A. Catalase and control cells versus treated cells, okay,</p> <p>4 in triplicates.</p> <p>5 Q. So you measure it once using the same sample, you</p> <p>6 measure the same sample two more times?</p> <p>7 A. Okay, oh, now I understand your question, okay. So</p> <p>8 this triplicate is for the assay, so we did one, two,</p> <p>9 three, four, five, six cell lines in triplicate each</p> <p>10 time point.</p> <p>11 Q. When you say in triplicate, does that mean you have</p> <p>12 three sets of petri dishes or are you doing one set of</p> <p>13 petri dishes and you're doing the test three times?</p> <p>14 MS. O'DELL: Objection.</p> <p>15 THE WITNESS: So it is -- this one here is</p> <p>16 one set of petri dish, and it's done in triplicate for</p> <p>17 each time point.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. So you didn't -- for each cell line you didn't have</p> <p>20 three --</p> <p>21 A. Independent.</p> <p>22 Q. -- independent cultures and then test each independent</p> <p>23 culture against the others. You had one independent</p> <p>24 culture you tested three times?</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 123</p> <p>1 Q. What does being done in triplicate mean?</p> <p>2 A. Every experiment is done in triplicate.</p> <p>3 Q. Explain that to me.</p> <p>4 A. Okay. So, for example, if you look at, see how --</p> <p>5 Q. What are you looking at?</p> <p>6 A. For example, 56, if you look at 56, look at the table.</p> <p>7 MS. O'DELL: Give us just a minute to get</p> <p>8 there.</p> <p>9 Q. Okay, go ahead.</p> <p>10 A. You have the table?</p> <p>11 Q. Yes.</p> <p>12 A. Okay. If you look at the table it says -- this</p> <p>13 particular ovarian cancer cell line, TOV-112-C, you</p> <p>14 have C, you have 5 microgram, you have 20 micrograms,</p> <p>15 and you have 100 microgram, you see them? And you can</p> <p>16 see OD1, OD2, OD3, blank, blank, blank, so triplicate,</p> <p>17 three times. The blank three times, the experiment</p> <p>18 three times, and subtract from the blank and do the</p> <p>19 calculation.</p> <p>20 Q. You're measuring the same protein extracted three</p> <p>21 times?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Is that correct?</p> <p>25</p>	<p style="text-align: right;">Page 125</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Is that correct?</p> <p>3 MS. O'DELL: If you need to read his</p> <p>4 question, it was confusing.</p> <p>5 THE WITNESS: Independent cultures, what does</p> <p>6 that mean?</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Well, I tried to use your word.</p> <p>9 A. I know.</p> <p>10 Q. Did you have for each cell line three separate petri</p> <p>11 dishes, three petri dishes, so you ran the experiment</p> <p>12 essentially three times for each cell line or did you</p> <p>13 have one petri dish with a cell line in it, extract the</p> <p>14 catalase, and run that extraction three times?</p> <p>15 A. No, no, no. How can you -- okay, I'm confused now.</p> <p>16 Okay, so how can you have one petri dish and you</p> <p>17 extract three time points of treatment?</p> <p>18 Q. I'm not asking you --</p> <p>19 A. So we have three, we have three, we have actually four,</p> <p>20 one, two, three, four, four independent culture dishes</p> <p>21 for each treatment.</p> <p>22 Q. Correct.</p> <p>23 A. That is done in triplicate.</p> <p>24 Q. And what you say in triplicate, that means you're</p> <p>25 taking the extraction and you're testing it three</p>

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<p style="text-align: right;">Page 126</p> <p>1 times, the same extraction.</p> <p>2 A. For each time point.</p> <p>3 Q. For each time point.</p> <p>4 A. Yes.</p> <p>5 Q. You don't have petri dishes that have the same cells in</p> <p>6 it for three separate petri dishes, then doing the</p> <p>7 extractions for each of those three petri dishes, do</p> <p>8 you follow my question?</p> <p>9 A. Yeah, I follow the question.</p> <p>10 MS. O'DELL: Objection.</p> <p>11 THE WITNESS: You cannot do that because then</p> <p>12 you have to do triplicate of triplicate.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Exactly.</p> <p>15 A. Have I done that?</p> <p>16 Q. Yes.</p> <p>17 A. No.</p> <p>18 Q. Okay. That was my question.</p> <p>19 A. Not for this assay.</p> <p>20 Q. Have you ever done assays like that where you've had --</p> <p>21 A. Yes.</p> <p>22 Q. -- multiple?</p> <p>23 MS. O'DELL: Let him finish.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Have you done assays like that where you've used the</p>	<p style="text-align: right;">Page 128</p> <p>1 MS. O'DELL: So you wanted 26 of the Bates,</p> <p>2 and that's at the bottom left corner 54.</p> <p>3 THE WITNESS: This?</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. Yes. Your sample ID for -- your sample IDs run from</p> <p>6 356 to 386, is that right?</p> <p>7 A. So let me understand your question. Are these numbers</p> <p>8 in serial number?</p> <p>9 Q. Are these the sample ID numbers of your tests?</p> <p>10 A. Okay, so the sample ID correspond to each specimen,</p> <p>11 yes, each cells.</p> <p>12 Q. And those sample IDs run in chronologic order from 356</p> <p>13 to 386?</p> <p>14 A. No, they're missing. For example, there is 60 -- where</p> <p>15 is it -- actually, 84, 85, yes, they are.</p> <p>16 Q. So you're right, they jump from 371 to 379, do you see</p> <p>17 that?</p> <p>18 A. Yeah.</p> <p>19 Q. Why is that?</p> <p>20 A. Because, you see, these are already, these cells were</p> <p>21 treated in different times, so that's why they get</p> <p>22 different IDs.</p> <p>23 Q. Okay.</p> <p>24 A. This is a lot of work. You can't do it in one time.</p> <p>25 Q. What type of test is -- or strike that. Then if you</p>
<p style="text-align: right;">Page 127</p> <p>1 same cell line in three different dishes and done the</p> <p>2 triplicate, triplicate, triplicate off of each dish?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: Okay, so in the past I have</p> <p>5 done -- this is a very important question, it is always</p> <p>6 raised when we submit our data to be considered for</p> <p>7 publication, they will say did you do a real triplicate</p> <p>8 or a triplicate of the assay. So the answer is we have</p> <p>9 done that in the past, and in our system here there is</p> <p>10 no difference between -- because catalase have been</p> <p>11 done in our lab, we published with it, it is a standard</p> <p>12 protocol in our lab, and we never have -- we test it</p> <p>13 for intra-assay variation triplicates, and that was not</p> <p>14 the case. Did we test that? Yes, we did, but not for</p> <p>15 talc treatment per se, because these are established</p> <p>16 protocols in our lab, we already know and we learn from</p> <p>17 them, so you don't really need to do a triplicate of a</p> <p>18 triplicate of a triplicate.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Thank you. On Page 26 of the Bates Stamp document</p> <p>21 Number 1, which is after --</p> <p>22 MS. O'DELL: 54 of the lab.</p> <p>23 MR. HEGARTY: Is it 54 of the lab notebook?</p> <p>24 Because I can't -- my page doesn't have a handwritten</p> <p>25 number.</p>	<p style="text-align: right;">Page 129</p> <p>1 turn over to Page 69 of Exhibit Number 1, which, again,</p> <p>2 my copy doesn't have a handwritten page number on it.</p> <p>3 MR. LAPINSKI: Counsel, just to confirm, when</p> <p>4 you refer to page numbers, you're referring to the</p> <p>5 Bates Numbers, correct?</p> <p>6 MR. HEGARTY: In this case I'm referring to</p> <p>7 Page 69 in Exhibit Number 1, which is the Bates Number.</p> <p>8 MS. O'DELL: Well, and to be -- I think in</p> <p>9 the lower right-hand corner of your page that's 94, and</p> <p>10 that's what was produced so --</p> <p>11 MR. HEGARTY: If you go to Page 94, then,</p> <p>12 Doctor.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. It should be this.</p> <p>15 A. Yes.</p> <p>16 Q. Are those the same sample numbers that we looked at in</p> <p>17 the prior -- on the prior page?</p> <p>18 A. What page was it? Sorry.</p> <p>19 Q. That was Page 54.</p> <p>20 A. Yes.</p> <p>21 Q. Do those refer to the same samples?</p> <p>22 A. Yes.</p> <p>23 Q. If you turn next, then, to page Bates Number 76 Exhibit</p> <p>24 Number 1, Page 100 in the laboratory notebook, there</p> <p>25 are -- do you see what I'm referring you to, Doctor,</p>

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<p style="text-align: right;">Page 130</p> <p>1 Page 100?</p> <p>2 A. Yes.</p> <p>3 Q. There are again sample numbers listed there. Are those</p> <p>4 for a different test?</p> <p>5 A. This is for different test, this is Caspase-3 activity.</p> <p>6 Q. Are you using the same sample numbers as in the</p> <p>7 previous test?</p> <p>8 A. It should indicate here, so 368, 369, 370, so the</p> <p>9 answer is yes, some of them, the numbers that</p> <p>10 correspond they are -- let me see, hold on, let me just</p> <p>11 make sure. So this is for ELISA, we did the normal --</p> <p>12 so the answer is yes.</p> <p>13 Q. If you're using the same numbers for different tests,</p> <p>14 how are you able to keep those straight?</p> <p>15 MS. O'DELL: Objection, form.</p> <p>16 THE WITNESS: Okay. So let me explain this.</p> <p>17 So here, this is the sample ID, the treated cells.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. That's on Page --</p> <p>20 A. 54.</p> <p>21 Q. Okay.</p> <p>22 A. So this is the sample ID, and this is what are they,</p> <p>23 what each cell line definition. Now, this was</p> <p>24 subjected to isolation of protein, okay, and we use</p> <p>25 BSA, as we discussed, as a standard, then you isolate</p>	<p style="text-align: right;">Page 132</p> <p>1 SAED DEPOSITION EXHIBIT NUMBER 11,</p> <p>2 NOTEBOOKS,</p> <p>3 WAS MARKED BY THE REPORTER</p> <p>4 FOR IDENTIFICATION</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. So Exhibit Number 11 is the notebook you brought with</p> <p>7 you to the deposition here today?</p> <p>8 A. This, yes.</p> <p>9 MS. O'DELL: There are actually two parts.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. There are two parts. Where is the other part?</p> <p>12 MS. O'DELL: It's right here.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Both parts of the notebook contain what?</p> <p>15 A. So references 86 continued 89.</p> <p>16 Q. Did you compile Exhibit Number 11? Did you put that</p> <p>17 together?</p> <p>18 A. Number 11 we're talking about? Sorry.</p> <p>19 Q. Number 11 are both notebooks.</p> <p>20 A. Yes.</p> <p>21 Q. Did you choose the articles to put in Exhibit</p> <p>22 Number 11?</p> <p>23 A. My references from the articles, yes.</p> <p>24 MS. O'DELL: Just I think there's some lack</p> <p>25 of clarity. You chose the articles. Did you copy the</p>
<p style="text-align: right;">Page 131</p> <p>1 the total protein from it, now you can do what we did,</p> <p>2 we can do catalase, we can do SOD, we can do different</p> <p>3 markers from total proteins. Caspase-3 is included.</p> <p>4 Q. Got you, okay thank you. I'm probably going into a</p> <p>5 different section that's going to take a while if you</p> <p>6 want to take a break now or keep going.</p> <p>7 MS. O'DELL: It's 12:15, Doctor, would you</p> <p>8 like a short break for lunch or what's your preference?</p> <p>9 THE WITNESS: Yes.</p> <p>10 MR. HEGARTY: Let's go off the record.</p> <p>11 THE VIDEOGRAPHER: Going off the record at</p> <p>12 12:16 p.m.</p> <p>13 (A recess was taken.)</p> <p>14 THE VIDEOGRAPHER: We are back on the record</p> <p>15 at 1:26 p.m.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Doctor, you brought with you a notebook that appears to</p> <p>18 contain articles and perhaps a number of other</p> <p>19 documents. What is in the notebook that you have in</p> <p>20 front of you?</p> <p>21 A. So I have my report that I submitted, my CV, and my</p> <p>22 references.</p> <p>23 Q. I'll mark that notebook as Exhibit Number 11.</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 133</p> <p>1 pages?</p> <p>2 THE WITNESS: No.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Did you put the notebooks together yourself?</p> <p>5 A. No.</p> <p>6 Q. Do you know who put the notebooks together?</p> <p>7 MS. O'DELL: Objection, it's a little vague.</p> <p>8 THE WITNESS: You guys did it.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. Counsel for Plaintiffs put the notebooks together?</p> <p>11 A. What do you call them, sorry?</p> <p>12 Q. Counsel for Plaintiffs put the notebooks --</p> <p>13 A. Yes, sorry, I'm just having -- I thought that I put the</p> <p>14 references together, yes.</p> <p>15 Q. I want to talk in more detail about Exhibit Number 7.</p> <p>16 That's your manuscript.</p> <p>17 A. Okay.</p> <p>18 Q. When did the writing process begin for Exhibit 7? And</p> <p>19 this goes back to the original version that you</p> <p>20 submitted to --</p> <p>21 A. Yes.</p> <p>22 Q. -- OB-GYN Oncology.</p> <p>23 A. September I think.</p> <p>24 Q. Do you know approximately when in September?</p> <p>25 A. I can't remember.</p>

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<p style="text-align: right;">Page 134</p> <p>1 Q. Dr. Fletcher is identified as the lead author. How did 2 that come about? 3 A. She is not the lead author. 4 Q. Who is the lead author? 5 A. I am. 6 Q. The reason I thought she was lead author is on the 7 second page of Exhibit Number 7 after the title she's 8 the first author listed. 9 A. That's -- lead author is the corresponding author, 10 that's me. 11 Q. What was the involvement of -- strike that. What was 12 Dr. Fletcher's involvement in the preparation of this 13 article? 14 A. So for the articles, she helped in doing the -- on this 15 article or experiments, the whole thing, or just this 16 article? 17 Q. Just on the article. 18 A. Okay, so her role was basically reading after me make 19 sure that the methods are what we really used, typos 20 and like help read proofing. 21 Q. What was Dr. Harper's involvement in preparation of the 22 manuscript? 23 A. Analysis of data, interpretation of data, she's a 24 clinical OB-GYN oncologist. 25 Q. What was Dr. -- or, I'm sorry, what was Ira Memaj?</p>	<p style="text-align: right;">Page 136</p> <p>1 article besides those we talked about? 2 A. No, so she -- that's why she's in the acknowledgment, 3 not in the authorship, because she was repeating 4 experiments. 5 Q. In connection with the experiments that you conducted 6 that went into preparing or that led to preparing of 7 this manuscript, did you prepare a proposal to request 8 funding of the experiments in the article? 9 MS. O'DELL: Object to the form. 10 THE WITNESS: I created a budget so to see 11 how much this will cost me. 12 BY MR. HEGARTY: 13 Q. When you seek funding from NIH, for example, or another 14 organization, you have to prepare a formal grant 15 request where you set out and provide certain 16 information describing what you intend to do and how 17 much it's going to cost, correct? 18 A. For NIH? 19 Q. Yes. 20 A. Yes. 21 Q. Did you prepare any kind of grant request in connection 22 with the experiments that went into preparing this 23 manuscript? 24 MS. O'DELL: Object to the form, other than 25 he's testified to.</p>
<p style="text-align: right;">Page 135</p> <p>1 A. Ira Memaj was a medical student that helped also in 2 looking for the grammar and proofreading mostly. 3 Q. What was Rong Fan's involvement? 4 A. Same thing. Now, the authors that are here, not 5 necessarily because they participated in writing the 6 manuscript, but they own the authorship because they 7 participated in the work that created the manuscript. 8 Q. What was Robert Morris's -- Dr. Robert Morris's -- 9 A. Dr. Morris is the OB-GYN Oncology chief, and he helped 10 in also editing the manuscript and help interpretation 11 of data clinically. 12 Q. Who prepared the original manuscript? Who was the 13 author? 14 A. I did. 15 Q. Did anyone help you write the original manuscript? 16 A. No. 17 Q. Did anyone in any way contribute to the manuscript 18 besides those individuals listed in Exhibit Number 7? 19 A. No. 20 Q. Over on Page 12 in the Acknowledgments section there's 21 a notation thanking Imaan Singh. 22 A. Yes, she was a medical student. 23 Q. What did Imaan Singh do? 24 A. She helped in running some experiments for us. 25 Q. Anyone else assist in any way in the preparation of the</p>	<p style="text-align: right;">Page 137</p> <p>1 THE WITNESS: The answer is no. 2 BY MR. HEGARTY: 3 Q. Did you submit the budget you created to anybody? 4 A. Official funding agencies, no. 5 Q. Did you provide the budget to Counsel for Plaintiffs, 6 Beasley Allen? 7 A. I can't remember. 8 Q. Do you still have a copy of the budget? 9 A. I do. 10 Q. Did you prepare any type of protocol or outline in 11 advance of the experiments describing the methods or 12 goals of the experiments? 13 A. In writing? 14 Q. In writing. 15 A. I don't remember. 16 Q. Is that something that's commonly done -- or strike 17 that. Is that something you commonly do in your work 18 in connection with doing studies that then go into a 19 journal article? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: So the way I do this, this 22 is -- again, this is routinely done in our lab, and we 23 ran a pilot experiment using PCR, using single dose, 24 and when we saw the data and we saw that there's a 25 biological effect, then we had a plan of what to do,</p>

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<p style="text-align: right;">Page 138</p> <p>1 and which is the whole study.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Do you prepare that plan in writing?</p> <p>4 A. In writing?</p> <p>5 Q. Yes.</p> <p>6 A. I really don't need to because it's the technology</p> <p>7 again, it is all applied in our laboratory, and we are</p> <p>8 testing the markers that we been extensively publishing</p> <p>9 on and testing through our lab.</p> <p>10 Q. For any articles that you have published in scientific</p> <p>11 journals, have you ever prepared an outline or protocol</p> <p>12 describing what you're going to do before you actually</p> <p>13 do the experiments?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: Yeah, so, again, I'm just</p> <p>16 trying to explain to you that the methodology is in</p> <p>17 place, it's in the lab, it's been published, it's been</p> <p>18 referenced, and we test the same markers over and over,</p> <p>19 so there is no need to every time write this down.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. But have you ever prepared in connection with a journal</p> <p>22 article you're going to hopefully write after doing</p> <p>23 experiments an outline or an overview or a summary of</p> <p>24 what you're going to do before you then go on and do</p> <p>25 it?</p>	<p style="text-align: right;">Page 140</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. So tell me again what meetings this --</p> <p>3 A. SRI.</p> <p>4 Q. -- testing was presented.</p> <p>5 A. SRI March 2018, and then if I recall correctly, ASRM</p> <p>6 October --</p> <p>7 MS. O'DELL: ASRM, is that what you're</p> <p>8 saying?</p> <p>9 THE WITNESS: No, it wasn't ASRM. I forgot</p> <p>10 which the other one -- SGO, SGO, I forgot where I</p> <p>11 submitted, sorry, but I did submit two abstracts and I</p> <p>12 presented them in national meetings, SRI for sure was</p> <p>13 March -- I believe it was SGO.</p> <p>14 MS. O'DELL: For the record, Doctor, what</p> <p>15 does SGO stand for?</p> <p>16 THE WITNESS: Society of Gynecology and</p> <p>17 Oncology.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. In March of 2018?</p> <p>20 A. The SRI meeting, yes, that was the preliminary study.</p> <p>21 Q. The lab notebook you provided includes entries for work</p> <p>22 that occurred after March 2018, correct?</p> <p>23 A. Correct.</p> <p>24 Q. What did you then present in March of 2018?</p> <p>25 A. We presented the work that we did preliminary just to</p>
<p style="text-align: right;">Page 139</p> <p>1 A. We write the methodology.</p> <p>2 Q. So you have written methodologies for what you're going</p> <p>3 to do before you actually start the experiments?</p> <p>4 MS. O'DELL: Object to the form, that's not</p> <p>5 what he said.</p> <p>6 THE WITNESS: Not this experiment.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. On other occasions you have done that?</p> <p>9 A. Yes.</p> <p>10 Q. On other occasions when you have published articles in</p> <p>11 scientific and medical journals?</p> <p>12 A. Not all the times, no.</p> <p>13 Q. When is it that you do prepare an outline or protocol?</p> <p>14 A. When it is something that is not routinely daily test</p> <p>15 that is performed in our laboratory, something</p> <p>16 different.</p> <p>17 Q. Did you discuss the results of the testing or the</p> <p>18 experiments with anyone outside of the authors on the</p> <p>19 manuscript?</p> <p>20 MS. O'DELL: Objection to form.</p> <p>21 THE WITNESS: Yes, so the answer -- I'm</p> <p>22 sorry, that wasn't the answer. This part of this work</p> <p>23 was accepted and presented at national meetings, was</p> <p>24 presented at SRI, presented at ASRM, and it was open</p> <p>25 for everybody to discuss.</p>	<p style="text-align: right;">Page 141</p> <p>1 show the effect on using just PCR.</p> <p>2 Q. Did you discuss the contents of the manuscript, Exhibit</p> <p>3 Number 7, with anyone besides the authors during the</p> <p>4 time it was being written?</p> <p>5 A. No.</p> <p>6 Q. Did you discuss the contents of the manuscript during</p> <p>7 the time it was being written with attorneys for</p> <p>8 Beasley Allen or any other Plaintiff's Counsel in this</p> <p>9 case?</p> <p>10 MS. O'DELL: Don't discuss -- I'm going to</p> <p>11 instruct you not to answer that question.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Doctor, if you would turn to --</p> <p>14 UNIDENTIFIED ATTORNEY: Excuse me, was that a</p> <p>15 yes or no question? You're instructing him not to</p> <p>16 answer whether he discussed the contents?</p> <p>17 MS. O'DELL: Well, the question presupposes</p> <p>18 the subject matter of the discussion and that's the --</p> <p>19 so I'm going to instruct him not to answer the</p> <p>20 question.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. Doctor, would you turn to Page 12 of Exhibit 7, please.</p> <p>23 Did you prepare the Conflict of Interest section on</p> <p>24 Page 12?</p> <p>25 A. Yes.</p>

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<p style="text-align: right;">Page 142</p> <p>1 Q. For whom did you act as a consultant for a fee?</p> <p>2 A. Beasley Allen.</p> <p>3 Q. Why didn't you disclose Beasley Allen in this Conflict</p> <p>4 of Interest disclosure?</p> <p>5 A. The name you mean?</p> <p>6 Q. Yes.</p> <p>7 A. Just add the name? I didn't do it.</p> <p>8 Q. At the time you prepared this manuscript, you were</p> <p>9 acting as a consultant for Beasley Allen in litigation</p> <p>10 involving the topic of this paper, correct?</p> <p>11 A. Correct.</p> <p>12 Q. But you didn't identify that in the Conflict of</p> <p>13 Interest disclosure that you were acting as a</p> <p>14 consultant in litigation involving this topic for a</p> <p>15 fee, correct?</p> <p>16 MS. O'DELL: Objection to form.</p> <p>17 THE WITNESS: The journal, this is sufficient</p> <p>18 language for the journal.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. But you did not disclose that you were acting as a</p> <p>21 consultant in litigation involving this topic, correct?</p> <p>22 MS. O'DELL: Objection to form.</p> <p>23 THE WITNESS: This is what I disclosed.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. At the time you prepared this disclosure, you were</p>	<p style="text-align: right;">Page 144</p> <p>1 A. No reason, I could add this --</p> <p>2 Q. You say in the disclosure that you acted as a</p> <p>3 consultant regarding this topic for a fee. What was</p> <p>4 the fee?</p> <p>5 A. What was the fee?</p> <p>6 Q. Yes.</p> <p>7 A. I think \$600 an hour.</p> <p>8 Q. Was the fee the total amount you gave us for your</p> <p>9 invoices at the beginning of the deposition?</p> <p>10 A. Yes. No?</p> <p>11 MS. O'DELL: Sorry, I was going to object, it</p> <p>12 was a little unclear, but I think you understood his</p> <p>13 question.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Doctor, don't you agree that anyone reading this</p> <p>16 article should know that you are a paid expert for</p> <p>17 lawyers who have a financial interest in this subject</p> <p>18 area?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: Again, my response would be I</p> <p>21 put the conflict of interest that I'm acting as a</p> <p>22 consultant on this topic.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Don't you think the --</p> <p>25</p>
<p style="text-align: right;">Page 143</p> <p>1 acting as a consultant -- strike that. At the time</p> <p>2 that you prepared this conflict of interest, you were</p> <p>3 acting as a named testifying expert in the</p> <p>4 litigation -- in the talc litigation for plaintiffs</p> <p>5 lawyers, correct?</p> <p>6 A. Is that the same question? Yes.</p> <p>7 Q. So at the time that you prepared this disclosure, you</p> <p>8 were not just a consultant, you were a testifying</p> <p>9 expert witness in litigation, correct?</p> <p>10 MS. O'DELL: Objection to form.</p> <p>11 THE WITNESS: As far as I know, I'm a</p> <p>12 consultant, witness expert to consult in this matter,</p> <p>13 yes.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. You did not disclose this relationship in the</p> <p>16 acknowledgment, that is, this relationship that you</p> <p>17 were a designated testifying expert in litigation</p> <p>18 involving talc and ovarian cancer, correct?</p> <p>19 A. The language that I wrote here was sufficient by the</p> <p>20 journal.</p> <p>21 MR. KLATT: Objection, nonresponsive.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Why didn't you disclose in this acknowledgment that you</p> <p>24 were a designated expert on behalf of plaintiffs in</p> <p>25 litigation involving talc and ovarian cancer?</p>	<p style="text-align: right;">Page 145</p> <p>1 A. -- for a fee.</p> <p>2 Q. Don't you think the potential readers of this article</p> <p>3 are entitled to know that you are using this article to</p> <p>4 profit on this topic?</p> <p>5 MS. O'DELL: Objection to form.</p> <p>6 THE WITNESS: This is the language that is</p> <p>7 requested by the journal.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. Don't you think that anyone reading this article would</p> <p>10 want to know that you have a financial interest in this</p> <p>11 topic?</p> <p>12 A. It says clearly fee, for a fee.</p> <p>13 Q. You don't identify, though, the area of this topic in</p> <p>14 which you're consulting, correct?</p> <p>15 MS. O'DELL: Objection to form.</p> <p>16 THE WITNESS: So for the reader of this, our</p> <p>17 readers, it's enough to say I'm a consultant for a fee</p> <p>18 on this topic.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. You are getting paid in this litigation to testify on</p> <p>21 behalf of plaintiffs, correct?</p> <p>22 A. Yes.</p> <p>23 Q. Your testimony is supported by the manuscript, by</p> <p>24 Exhibit Number 7, correct?</p> <p>25 MS. O'DELL: Objection to form.</p>

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<p style="text-align: right;">Page 146</p> <p>1 THE WITNESS: It's -- part of it is in the</p> <p>2 manuscript and part of it is not.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. You stand to benefit financially to the extent</p> <p>5 Plaintiff's Counsel use your article successfully in</p> <p>6 this litigation, correct?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: I didn't understand the</p> <p>9 question.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. You stand to benefit financially to the extent that</p> <p>12 Plaintiff's Counsel use your article in this</p> <p>13 litigation, correct?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: Can you -- I know but I don't</p> <p>16 understand what you really want to say.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. You stand to benefit financially, make more money by</p> <p>19 Plaintiff's Counsel using your article in this</p> <p>20 litigation, correct?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: No, I'm not aware, how they</p> <p>23 going to make more money by using this?</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Well, they will continue to use you as an expert</p>	<p style="text-align: right;">Page 148</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. The rest of the conflict of interest disclosure says</p> <p>3 that no other -- the authors declare -- the other</p> <p>4 authors declare there are no conflicts of interest; do</p> <p>5 you see that?</p> <p>6 A. I do.</p> <p>7 Q. So did any of the other authors consult on this topic</p> <p>8 for a fee, to your knowledge?</p> <p>9 A. To my knowledge, no.</p> <p>10 Q. Were the other authors on this manuscript aware of your</p> <p>11 relationship with the attorneys for Beasley Allen in</p> <p>12 this litigation?</p> <p>13 A. Yes, they are.</p> <p>14 Q. How were they made aware of it?</p> <p>15 A. I made them aware of it.</p> <p>16 Q. When did you make them aware of it?</p> <p>17 A. When we started this whole thing.</p> <p>18 Q. What did you tell them?</p> <p>19 A. I tell them I'm acting as a -- what do you call it -- a</p> <p>20 witness expert in this litigation.</p> <p>21 Q. Did you -- have you told them that you've been</p> <p>22 designated to testify as an expert witness in this</p> <p>23 litigation?</p> <p>24 MS. O'DELL: Objection, asked and answered.</p> <p>25 THE WITNESS: I just said -- shared with them</p>
<p style="text-align: right;">Page 147</p> <p>1 witness in all the cases to the extent they are</p> <p>2 successful in using your article, correct?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: So they can use whatever they</p> <p>5 want. This is my research and my lab. These are the</p> <p>6 results that I stand for.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Do you think they would pay you to testify in this</p> <p>9 litigation if your results were different in your</p> <p>10 article?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: This work, negative results or</p> <p>13 positive results, both are results, so they're paying</p> <p>14 for my time to consult. Whether it's positive or</p> <p>15 negative to them doesn't matter.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Well, when you said you're acting as a consultant</p> <p>18 regarding this topic, what is this topic? Is it</p> <p>19 inflammation and cancer? Is it antioxidants? Is it</p> <p>20 talc? How is the reader supposed to know?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: If you read -- the reader will</p> <p>23 read the title, which says Molecular Basis Supporting</p> <p>24 the Association of Talcum Powder Use With Increased</p> <p>25 Risk of Ovarian Cancer; very clear topic.</p>	<p style="text-align: right;">Page 149</p> <p>1 that I was selected to be an expert witness in this</p> <p>2 topic.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. And you told them that before you started the</p> <p>5 experiments?</p> <p>6 A. About, yeah.</p> <p>7 Q. You are the senior author on this paper, correct?</p> <p>8 A. Correct.</p> <p>9 Q. Do you in any way supervise or do you in any way</p> <p>10 supervise any of the work of the other authors?</p> <p>11 A. All the work that is in this manuscript is done under</p> <p>12 my hundred percent supervision.</p> <p>13 Q. How about generally, do you supervise any of the other</p> <p>14 authors?</p> <p>15 A. I do.</p> <p>16 Q. Do they report to you?</p> <p>17 A. Yes.</p> <p>18 Q. Which ones report directly to you?</p> <p>19 A. So Nicole King, Ira, Amy, and that's about all the</p> <p>20 authors here.</p> <p>21 Q. Are you a resource for grant funding for things that</p> <p>22 they work on?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: Am I a resource?</p> <p>25</p>

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<p>1 BY MR. HEGARTY: 2 Q. Yes. Do they work on studies that you have received 3 funding for? 4 A. No. 5 Q. Do they otherwise work for you -- let me strike that. 6 Do they work for you -- have they done work for you 7 outside of the work on this manuscript? 8 A. Some of them -- 9 MS. O'DELL: Object to form. 10 THE WITNESS: Some of them did. 11 BY MR. HEGARTY: 12 Q. Do some of them still work for you? 13 A. Yes. 14 Q. Which of the authors still work for you? 15 MS. O'DELL: Object to the form. 16 THE WITNESS: Work for me or work with me? 17 BY MR. HEGARTY: 18 Q. Work for you. 19 A. Work for me? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: So what's work for me means? 22 I'm their supervisor? 23 BY MR. HEGARTY: 24 Q. Yes. 25 A. I'm paying their salary?</p>	<p>1 January 16, 2019. Do you see where it lists SAGE 2 Publications, underneath that Reproductive Sciences? 3 A. This here? 4 Q. Yes, at the top. SAGE and Reproductive Sciences. 5 A. Yes. 6 Q. Reproductive Sciences is a journal that has accepted 7 your article for publication, correct? 8 A. Yes. 9 Q. This exhibit identifies the editorial policies, peer 10 review policies, and other policies of this 11 publication. Are you familiar with all of these 12 policies? 13 MS. O'DELL: Object to the form. 14 THE WITNESS: Some. 15 BY MR. HEGARTY: 16 Q. Would you turn over to Page 5, sorry, Page 3 of 10. 17 Under the section Funding, it states that to comply 18 with the guidance for research funders, authors, and 19 publishers issued by the Research Information Network, 20 RS additionally requires all authors to acknowledge 21 their funding in a consistent fashion under a separate 22 heading. Do you see that? 23 A. Yes. 24 Q. Where in your acknowledgment do you acknowledge the 25 source of your funding?</p>
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<p>1 Q. You're their supervisor. Are you their supervisor? 2 A. Yes, I'm supervisor of Rong Fan, she is my research 3 technician or assistant. I am the Fellow Director for 4 the fellowship of Amy Harper. And let's see who's 5 here, Ira's no longer with us, she went to medical 6 school in New York. 7 Q. Do you prepare evaluations for -- have you prepared 8 evaluations for any of the authors on this paper? 9 A. Previously? 10 Q. Previously. 11 A. Nicole Fletcher. 12 Q. Any others? 13 A. Yearly evaluation because she was a post doc in my lab, 14 and this year I will prepare one for Rong. 15 Q. Reproductive Sciences is -- Reproductive Sciences is 16 published by SAGE Publications, correct? 17 A. I don't know, they keep, they switch different 18 publishers. 19 SAED DEPOSITION EXHIBIT NUMBER 12, 20 SAGE PUBLISHING DOCUMENT, 21 WAS MARKED BY THE REPORTER 22 FOR IDENTIFICATION 23 BY MR. HEGARTY: 24 Q. I'm going to mark as Exhibit Number 12 a printout from 25 the SAGE Publications website, it's printed out on</p>	<p>1 A. Okay, so this is -- this only applies to agencies that 2 require this. So, for example, I got NIH grant, I got 3 funding from NIH, I have to disclose funding from NIH. 4 If there is no funding, if it's internal funding, you 5 don't have to do that. 6 Q. Where does that standard -- where is that standard in 7 this document? 8 A. This is -- I have published in this journal for the 9 last 20 years. This is the protocol that we use. 10 Q. Can you cite for me any anything that came from SAGE 11 Publications saying that that's an appropriate reading 12 of the funding requirements? 13 MS. O'DELL: Object to the form. 14 THE WITNESS: I already told you we published 15 with SRI for several years, and my understanding that 16 if the agency, the funding agency requests that you 17 should add their name to the funding part of it, then 18 you should do that. If it's no funding -- departmental 19 is not considered funding, that's a burden actually, 20 it's not funding. 21 BY MR. HEGARTY: 22 Q. If you look under the section Declaration of 23 Conflicting Interests, you see the last paragraph of 24 that section before For More Information, it reads any 25 commercial or financial involvements that might</p>

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<p style="text-align: right;">Page 154</p> <p>1 represent an appearance of a conflict of interest need</p> <p>2 to be additionally disclosed in the covering letter</p> <p>3 accompanying your article to assist the editor in</p> <p>4 evaluating whether sufficient disclosure has been made</p> <p>5 within the Declaration of Conflicting Interests</p> <p>6 provided in the article. Do you see where I'm reading?</p> <p>7 A. Yes.</p> <p>8 Q. Did you provide such a cover letter to the editor of</p> <p>9 Reproductive Sciences identifying your consulting</p> <p>10 relationship with Beasley Allen?</p> <p>11 A. Okay, so when you go to the website Reproductive</p> <p>12 Sciences and you try to upload your manuscript to be</p> <p>13 considered for review on publication, there are forms</p> <p>14 that -- pages that you go through, and each page you</p> <p>15 have to answer the question before it allows you to</p> <p>16 proceed. So one of the pages was conflict of interest,</p> <p>17 and they, at that level they just want to know if you</p> <p>18 have a conflict of interest, you say "yes" or "no."</p> <p>19 And then later on in the manuscript you identify the</p> <p>20 conflict of interest if there is any.</p> <p>21 Q. When you were asked if you had a conflict of interest</p> <p>22 how did you respond?</p> <p>23 A. Yes.</p> <p>24 Q. Then you went to the next page that that would lead you</p> <p>25 to, and that's where you prepared --</p>	<p style="text-align: right;">Page 156</p> <p>1 A. If I did, yes.</p> <p>2 Q. If you sent a cover letter, do you recall if you</p> <p>3 provided information about the conflict of interest you</p> <p>4 disclosed in your paper or manuscript?</p> <p>5 MS. O'DELL: Object to the form.</p> <p>6 THE WITNESS: Yeah, if I provided the cover</p> <p>7 letter, will there be a conflict of interest in the</p> <p>8 cover letter?</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. Yes. Do you recall if you described the conflict of</p> <p>11 interest in your cover letter as required under the</p> <p>12 SAGE Publishing guidelines, Exhibit Number 12?</p> <p>13 MS. O'DELL: Objection to form.</p> <p>14 THE WITNESS: Yes, so in our practice I have</p> <p>15 been publishing with this particular journal and other</p> <p>16 journals, I never seen a cover letter saying that we</p> <p>17 have a conflict of interest. It's not a practice of</p> <p>18 talking to the editor and tell them that this is</p> <p>19 what --</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. In any of your prior publications have you ever</p> <p>22 disclosed a conflict of interest?</p> <p>23 A. Yes.</p> <p>24 Q. And do you recall an example of when you disclosed a</p> <p>25 conflict of interest?</p>
<p style="text-align: right;">Page 155</p> <p>1 A. Your manuscript.</p> <p>2 Q. -- the Acknowledgment Section, correct?</p> <p>3 A. No.</p> <p>4 Q. Sorry, the Conflict of Interest Section.</p> <p>5 A. No, no. Okay, so you write -- this is part of the</p> <p>6 format of the manuscript, the acknowledgment, the</p> <p>7 conflict of interest, that's the setup. Like how it</p> <p>8 says abstract, key words, introduction, methods, all</p> <p>9 that, this is part of the format, so this has to be in</p> <p>10 the manuscript, we upload to them.</p> <p>11 Q. What did you type in on that online form when you said</p> <p>12 yes to having a conflict of interest and then it</p> <p>13 directed you to another --</p> <p>14 A. There is no other form, they direct you to upload your</p> <p>15 manuscript. They accepted your yes answer, and then</p> <p>16 they allow you to proceed. If you don't answer, you</p> <p>17 are not allowed to proceed.</p> <p>18 Q. Exhibit Number 12 also says in the paragraph that I</p> <p>19 read to you that in addition to what you just</p> <p>20 described, that you need to include such a disclosure</p> <p>21 in the cover letter accompanying your article. First</p> <p>22 of all, did you send a cover letter with your article?</p> <p>23 A. I can't remember if it was required.</p> <p>24 Q. If you sent a cover letter, do you still have a copy of</p> <p>25 that cover letter?</p>	<p style="text-align: right;">Page 157</p> <p>1 A. When?</p> <p>2 Q. Yes. Do you recall an example of when you disclosed a</p> <p>3 conflict of interest?</p> <p>4 A. Every manuscript you submit you have to disclose a</p> <p>5 conflict of interest, whether it's yes or no, you have</p> <p>6 to.</p> <p>7 Q. Well, let me ask it a different way. Have you ever</p> <p>8 included a conflict of interest statement like the one</p> <p>9 in your manuscript in any prior publication of yours?</p> <p>10 A. Very rare, because I never consult -- I don't consult</p> <p>11 usually in this caliber, but colleagues, co-authors</p> <p>12 have done that, and there are co-authors in my</p> <p>13 publications. Everybody has to disclose.</p> <p>14 SAED DEPOSITION EXHIBIT NUMBER 13,</p> <p>15 SAGE PUBLISHING DOCUMENT,</p> <p>16 WAS MARKED BY THE REPORTER</p> <p>17 FOR IDENTIFICATION</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. We'll mark as Exhibit 13 another printout from the SAGE</p> <p>20 Publications website on the ethics and responsibility</p> <p>21 of authors. Would you look at Exhibit 13, Doctor.</p> <p>22 A. Yes.</p> <p>23 Q. Under the section Authors, it says authors should</p> <p>24 ensure that, and go down several bullet points where it</p> <p>25 reads any real or apparent conflicting or competing</p>

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<p style="text-align: right;">Page 158</p> <p>1 interest is clearly stated on submission of their 2 paper. (This would include funding assistance). Do 3 you see that? 4 A. Where do you -- where is this -- 5 Q. It's the bullet point, second to last bullet point at 6 the very bottom of the page. 7 A. Yes. 8 Q. So this is saying that any -- an author should ensure 9 that any real or apparent conflicting or competing 10 interest is clearly stated on submission of their 11 paper. (This would include funding assistance). Do 12 you see where I'm reading? 13 A. Yes. 14 Q. And is it your contention that you did that in this 15 manuscript? 16 A. I did. 17 Q. You did not disclose in this manuscript that you 18 received funding for this paper by attorneys in 19 litigation, did you? 20 A. I did, yes, I said consulting for a fee. 21 Q. Where do you make reference to consulting for a fee in 22 litigation? 23 A. That's my -- 24 MS. O'DELL: Objection to form. 25 THE WITNESS: That's my understanding.</p>	<p style="text-align: right;">Page 160</p> <p>1 The first paragraph of the letter makes 2 reference to comments of the reviewers being included 3 at the bottom of this letter, and we'll get to those 4 comments, but you did receive comments back from 5 reviewers of this article, correct? 6 THE WITNESS: This is the only thing I 7 received. 8 BY MR. HEGARTY: 9 Q. Did you eventually receive comments back from reviewers 10 of the article? 11 A. This is the only letter I received. 12 Q. In addition to the letter, you did receive comments 13 from authors of the -- I'm sorry -- from reviewers of 14 the manuscript, correct? 15 MS. O'DELL: Objection, asked and answered. 16 THE WITNESS: Is this the whole -- 17 BY MR. HEGARTY: 18 Q. Let me mark as Exhibit 14 -- 19 A. Is this the whole letter? 20 MS. O'DELL: I think it's two pages. 21 THE WITNESS: It's two pages? This is the 22 whole e-mail? 23 24 25</p>
<p style="text-align: right;">Page 159</p> <p>1 BY MR. HEGARTY: 2 Q. You chose to use the words you set out in the Conflict 3 of Interest Section, correct? 4 A. Yes. 5 Q. You agree that your relationship as a consultant does 6 present a conflict of interest? 7 MS. O'DELL: Object to the form. 8 THE WITNESS: My relationship? 9 BY MR. HEGARTY: 10 Q. Yes, as a consultant does present a conflict of 11 interest, which is why you included a Conflict of 12 Interest Statement, correct? 13 MS. O'DELL: Object to the form. 14 THE WITNESS: We keep going back the same 15 circles. What's the question? 16 BY MR. HEGARTY: 17 Q. You agree that your relationship with attorneys for 18 Beasley Allen presents a conflict of interest that you 19 needed to disclose? 20 A. I disclosed that, yes. 21 Q. If you would look at the letter on the very back page 22 again of Exhibit Number 7. 23 MS. O'DELL: Is the intent of the exhibit to 24 include all of the communications or just this one? 25 MR. HEGARTY: Start with this one.</p>	<p style="text-align: right;">Page 161</p> <p>1 SAED DEPOSITION EXHIBIT NUMBER 14, 2 COPY OF LETTER FROM REPRODUCTIVE SCIENCES, 3 WAS MARKED BY THE REPORTER 4 FOR IDENTIFICATION 5 BY MR. HEGARTY: 6 Q. I'm going to mark as Exhibit 14 in addition to what we 7 had received in connection with that manuscript, but 8 this is the letter with the reviewer comments included. 9 A. Yeah, this is all I received. 10 Q. Is Exhibit Number 14 a copy of the letter with the 11 reviewer comments at the end? 12 A. Okay, this is all I received. 13 Q. When you say this, you're talking about -- 14 A. The letter. 15 Q. -- number 14? 16 A. Yeah, the e-mail. 17 Q. The next paragraph in that e-mail, the second paragraph 18 says that the reviewers have recommended publication 19 but also suggest some minor revisions to your 20 manuscript. Therefore, I invite you to respond to the 21 viewer's comments and revise your manuscript. Do you 22 see where I'm reading? 23 A. Yes. 24 Q. Did you respond to the reviewer's comments? 25 A. Yes.</p>

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<p style="text-align: right;">Page 162</p> <p>1 Q. Did you respond to reviewer's comments via e-mail?</p> <p>2 A. No, you can't do that.</p> <p>3 Q. How did you respond to viewer's comments?</p> <p>4 A. So you have to log in to Manuscript Central, you have</p> <p>5 to go to Revised Manuscript, and you have to include</p> <p>6 highlighted changes in the revised manuscript, and then</p> <p>7 you have to submit that to the reviewer one more time.</p> <p>8 Q. And did you do that in this case?</p> <p>9 A. Yes.</p> <p>10 Q. Do you still have a copy of the highlighted copy of the</p> <p>11 revisions that you submitted to the reviewers?</p> <p>12 A. Yes, and, also, it's in the website for the journal.</p> <p>13 Q. If you look down at Paragraph 6 of Exhibit 14, it reads</p> <p>14 when submitting your revised manuscript, you will be</p> <p>15 able to respond to the comments made by the reviewers</p> <p>16 in the space provided. So is there actually a space</p> <p>17 provided where you can actually communicate with the</p> <p>18 reviewers?</p> <p>19 A. (Witness shakes head from side to side.) You can't</p> <p>20 communicate with the reviewers.</p> <p>21 Q. Is there any way to respond?</p> <p>22 A. I don't know who they are, yes, you have to write your</p> <p>23 response but to the editor, not to the reviewer. I</p> <p>24 don't know who is the reviewer.</p> <p>25 Q. So did you write a response to the comments to the</p>	<p style="text-align: right;">Page 164</p> <p>1 A. I don't know, I don't know because they -- you write</p> <p>2 them, you write them in a space online, and they</p> <p>3 incorporate them into the manuscript if they agree with</p> <p>4 it, maybe disagree. So they send it to the reviewer,</p> <p>5 and the reviewer will decide, okay, I like this</p> <p>6 explanation, add it to the manuscript, or this</p> <p>7 explanation is already in the manuscript, which I</p> <p>8 recall I said to the reviewer, to the editor.</p> <p>9 Q. You recall saying to the editor that this -- as to this</p> <p>10 comment, it was already in the manuscript?</p> <p>11 A. Yes, I said this has been addressed in this section of</p> <p>12 manuscript; however, this is what we believe the</p> <p>13 molecular mechanism is all about. And he sent it to</p> <p>14 the reviewer, and the reviewer will say I agree, go</p> <p>15 ahead, accept, or I disagree, I think they should edit,</p> <p>16 or we don't like the whole comment.</p> <p>17 Q. Do you still have a copy of your response to this</p> <p>18 reviewer's comment?</p> <p>19 A. Again, this is done on the website.</p> <p>20 Q. Is that comment still on the website, to your</p> <p>21 knowledge?</p> <p>22 A. I don't know, but I can find it.</p> <p>23 Q. Well, what is the mechanism by which the ovary, and not</p> <p>24 the vagina, the cervix, or the endometrium are</p> <p>25 susceptible to talc effects, in your opinion?</p>
<p style="text-align: right;">Page 163</p> <p>1 editor?</p> <p>2 A. Correct.</p> <p>3 Q. And do you still have a copy of that response?</p> <p>4 A. It's uploaded in the manuscript center, and I do have a</p> <p>5 copy, yes.</p> <p>6 Q. With regard to the reviewer comments, if you look at</p> <p>7 the second page of Exhibit 14, the first sentence under</p> <p>8 Comments and Suggestions, it reads what is the</p> <p>9 mechanism by which the ovary and not the vagina, the</p> <p>10 cervix, or the endometrium are susceptible to talc</p> <p>11 effects? Do you see where I'm reading?</p> <p>12 A. Yes, sorry.</p> <p>13 Q. Did you include any explanation in your revised</p> <p>14 manuscript to explain the mechanism by which the ovary</p> <p>15 and not the vagina and the cervix and the endometrium</p> <p>16 are susceptible talc effects?</p> <p>17 A. It was in the letter and response to the reviewer, to</p> <p>18 the editor, yes, it was in the form that you submit.</p> <p>19 Q. Did you revise your manuscript to include such a</p> <p>20 discussion about the mechanism by which the ovary and</p> <p>21 not the vagina, the cervix, or the endometrium are</p> <p>22 susceptible to talc effects?</p> <p>23 A. I believe I did, I added three sentences to clarify</p> <p>24 that.</p> <p>25 Q. Where in your manuscript are those three sentences?</p>	<p style="text-align: right;">Page 165</p> <p>1 A. So, in my opinion, that talcum powder, talcum particles</p> <p>2 go -- transfer, it's an open access for genital use.</p> <p>3 When they use it for genital use, it goes into the</p> <p>4 ovaries and incorporate into the tissues, and this</p> <p>5 continuously induce chronic inflammation that is linked</p> <p>6 strongly and actually the cause of ovarian cancer. Why</p> <p>7 other tissues don't get it, there are more than one</p> <p>8 explanation to that if you'd like to hear it.</p> <p>9 Q. Well, yeah, because I want to know what you believe to</p> <p>10 be the difference in the ovary versus the other organs.</p> <p>11 A. Yes. First, cancer is a tissue specific like cervical</p> <p>12 cancer, HPV so -- Second is the area in the uterus is</p> <p>13 full of secretion, and there is a dilution factor that</p> <p>14 kick everything out, whereas if it make it -- if the</p> <p>15 particles makes it to the ovaries, they sit there</p> <p>16 indefinitely.</p> <p>17 Q. Anything else?</p> <p>18 A. For now.</p> <p>19 Q. What about the -- you mentioned, though, the uterus.</p> <p>20 What about the vagina and cervix?</p> <p>21 A. What about --</p> <p>22 Q. Why is the ovary affected and not the vagina and</p> <p>23 cervix?</p> <p>24 A. Shall I repeat that, my answer?</p> <p>25 Q. Is it the same reason in your opinion?</p>

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<p style="text-align: right;">Page 166</p> <p>1 A. It's the wash, it's the dilution factor, it's the 2 excretion, it's always excretions, but ovaries are not. 3 Q. And is that opinion somewhere in Exhibit Number 7? You 4 said it already is in the section. In what section is 5 that concept? 6 A. So the peristaltic travel of the talcum particles into 7 the ovary has been actually discussed somewhere. 8 Q. That's over at the bottom of Page 8. Is that the 9 portion of the paper that you say already addresses 10 this comment? 11 A. Yes, part of it. 12 Q. Where else in the manuscript do you address this 13 comment by one of the reviewers? 14 A. I think this is sufficient, in my opinion, to show 15 evidence that there is a transfer of the particles from 16 the vagina and uterus area and fallopian tube into the 17 ovaries, that's substantial. 18 Q. The next comment reads what do the authors believe is 19 the determining factor for the increased sensitivity of 20 the epithelial ovarian cells to talc? You see where 21 I'm reading? 22 A. Where is that? Where is it? 23 Q. In the second comment that begins -- 24 A. Oh, the determining factor. 25 Q. What is -- the second comment is what do the authors</p>	<p style="text-align: right;">Page 168</p> <p>1 the epithelial ovarian cells to talc? 2 A. Chronic inflammation. 3 Q. And how is chronic inflammation -- or strike that -- 4 how are epithelial ovarian cells, how do they have 5 increased sensitivity to chronic inflammation? 6 A. So this is what actually made them in the first place. 7 It's the fact that they are exposed to continuously 8 over time with talcum particles, and that created a 9 chronic inflammation that actually transformed those 10 cells and caused the cells to go, the epithelial 11 ovarian cells to go cancerous with time. 12 Q. So, in your opinion, for purposes of your biologic 13 mechanism for talc causing ovarian cancer, talc must 14 reach the ovary, correct? 15 MS. O'DELL: Object to the form. 16 THE WITNESS: Not necessarily. 17 BY MR. HEGARTY: 18 Q. Well, the processes you just described all involve talc 19 reaching the ovary, correct? 20 A. No. I said any environment that create chronic 21 inflammation to the ovaries, epithelial ovarian cells, 22 normal ones, can or are known to develop this signature 23 of pro-oxidant state. We have published that in 24 several manuscripts. 25 Q. So, in your opinion, where must talc go to cause the</p>
<p style="text-align: right;">Page 167</p> <p>1 believe is the determining factor for the increased 2 sensitivity of the epithelial ovarian cells to talc? 3 How did you respond to that comment? 4 A. This is the core of the actual, the whole manuscript, 5 is about chronic inflammation and its link to ovarian 6 cancer. 7 Q. Did you revise your manuscript in response to this 8 reviewer comment? 9 A. Yes. 10 Q. How did you revise the transcript -- I'm sorry -- the 11 manuscript in response to this reviewer comment? 12 A. So we took the last part, we cut some words out, it 13 says wordy -- 14 Q. I'm not talking about that comment yet. 15 A. Which comment? 16 Q. The determining factor comment. 17 A. I told you, you don't need necessarily to agree with 18 the reviewer comment, you just put it in the -- there's 19 a box when you go online, and you just say we believe 20 that the manuscript is all about why ovarian cancer are 21 sensitive to inflammation. 22 Q. Is that how you responded to this reviewer comment? 23 A. Yes. 24 Q. So what is your opinion as to what you believe the 25 determining factor is for the increased sensitivity of</p>	<p style="text-align: right;">Page 169</p> <p>1 inflammation that you say can cause ovarian cancer? 2 MS. O'DELL: Objection to form. 3 THE WITNESS: Yeah, so I don't know, but what 4 I'm saying is the genital use of talcum powder expose 5 the genital tract, the reproductive tract to chronic 6 inflammation that, according to our 30 years of 7 studies, is linked and the cause of ovarian cancer. 8 BY MR. HEGARTY: 9 Q. Well, where in the genital tract must the chronic 10 inflammation occur to cause ovarian cancer? 11 A. If the environment is chronic and it has chronic 12 inflammation -- so preferred will be -- the first thing 13 will be actual contact, which would be in the ovaries, 14 second would be fallopian tube, and there are many 15 studies now indicating that the source of epithelial 16 ovarian cancer come from fallopian tube, and fallopian 17 tube is very close to the uterus and that close to the 18 cervix and vagina, so that's an open access in the 19 body. 20 Q. So you mentioned -- as far as where the chronic 21 inflammation must consider, you mentioned the ovary and 22 the fallopian tube. Is there any other organ in the 23 reproductive tract that you believe if it becomes 24 inflamed due to talc can lead to ovarian cancer? 25 MS. O'DELL: Object to the form.</p>

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<p style="text-align: right;">Page 170</p> <p>1 THE WITNESS: Yeah, I -- no, I understood 2 your question, but I disagree, that's not what I said. 3 BY MR. HEGARTY: 4 Q. What did you say? 5 A. No. So what I said is the use of talcum powder allows 6 talcum particles, according to our research, we added 7 the particles to the cells, the cells showed 8 inflammatory response. So we expect if the talcum 9 powder enter the genital area, go to -- and I said I, 10 you know, organized them for you, so the most effect 11 will be if they are in the ovary, and we already have 12 evidence, and not just us, every -- all the world know 13 now, that acute inflammation does not cause cancer, is 14 not linked to cancer, it may initiate cancer, but 15 chronic inflammation is the real trigger for cancer in 16 general and ovarian cancer. And we have shown that all 17 these redox balance is altered in ovarian cancer cells. 18 So the first impact, the highest impact will be if the 19 particle is in the ovary, and this has been reported by 20 some people, and the second or less degree, less impact 21 or longer time, maybe it's the same impact but it's a 22 longer time probably, all this need to be further 23 studied, is in the fallopian tube, and then who knows 24 what it does to uterus and cervical area. 25 Q. Well, I thought you said when you responded to the</p>	<p style="text-align: right;">Page 172</p> <p>1 cancer risk? 2 Q. Question is very specific. Can you cite for me any 3 published literature reporting finding chronic 4 inflammation in the presence of talc in the fallopian 5 tubes or ovaries or the endometrium in women using 6 talc? 7 MS. O'DELL: Objection to the form. 8 Epidemiological studies is what the doctor asked you to 9 clarify. Is that what you meant? 10 THE WITNESS: Do you -- 11 BY MR. HEGARTY: 12 Q. I don't think -- I'm not talking about epidemiologic 13 studies. I'm talking about can you cite for me any 14 studies that report finding inflamed tissue in the 15 presence of talc in women using talc on the perineum? 16 MS. O'DELL: Object to the form. 17 THE WITNESS: So your question is any 18 manuscript, any papers, any papers that cite or discuss 19 the presence of inflamed tissues in response to woman 20 using talcum powder. 21 BY MR. HEGARTY: 22 Q. Correct. 23 A. And my answer to you is I don't know any references. 24 What I do know, that there are lots of epidemiological 25 studies that link woman who uses talcum powder are at</p>
<p style="text-align: right;">Page 171</p> <p>1 question, the comment that said the mechanism which the 2 ovary and not the vagina, the cervix, or the 3 endometrium are susceptible, that this washing keeps 4 those organs from being susceptible. So the 5 endometrium is in the uterus, correct? 6 MS. O'DELL: Object to the form. 7 THE WITNESS: Okay. So the question here 8 they are asking about mechanisms in the ovaries, so 9 that's what I responded to. 10 BY MR. HEGARTY: 11 Q. Well, do you consider the endometrium to be a 12 susceptible organ to talc in the sense that it can 13 cause inflammation that can lead to ovarian cancer? 14 A. Probably. 15 Q. Can you cite for me any published scientific or medical 16 article reporting inflammation of the ovaries or 17 inflammation of the fallopian tubes or the endometrium 18 in women using talc? 19 MS. O'DELL: Object to the form. 20 THE WITNESS: So can I report articles for 21 you? 22 BY MR. HEGARTY: 23 Q. Yes. 24 A. There are -- are you talking about gynecological 25 studies that link the use of -- in women to ovarian</p>	<p style="text-align: right;">Page 173</p> <p>1 increased risk of developing ovarian cancer. That is 2 in the literature everywhere. There are some few 3 molecular work also indicating that this also can cause 4 inflammation, oxidative stress, it's out in there. 5 There are some other molecular works that also shows 6 that there is actually gene expression differential, 7 gene expression in exposure to talc, and this is 8 really -- I mean this powder, this particle cause 9 biological changes to the cell, so I am not surprised 10 if it does the same inside the genital tract. 11 Q. The next comment in Exhibit Number 14 says the 12 manuscript is wordy and would benefit from an attentive 13 reduction, do you see that? 14 A. I did. 15 Q. How did you respond to that comment? 16 A. I agreed, and I shaped some words unnecessary 17 references that we have established methodology that we 18 don't need to do, to have. 19 SAED DEPOSITION EXHIBIT NUMBER 15, 20 JANUARY 14, 2019 E-MAIL, 21 WAS MARKED BY THE REPORTER 22 FOR IDENTIFICATION 23 BY MR. HEGARTY: 24 Q. I want to next mark as Exhibit 15 another reviewer 25 comment that we were provided. Do you recognize</p>

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<p style="text-align: right;">Page 174</p> <p>1 Exhibit 15?</p> <p>2 A. This is an e-mail from the editor.</p> <p>3 Q. Yes.</p> <p>4 A. Yes, saying that they accepted the manuscript.</p> <p>5 Q. This is dated January 14, 2019, correct?</p> <p>6 A. Okay.</p> <p>7 Q. Is that right?</p> <p>8 A. Yes, it says so.</p> <p>9 Q. Then again it -- strike that. Below it says Reviewer:</p> <p>10 1, correct?</p> <p>11 A. Yes.</p> <p>12 Q. Comments to the author. Well done.</p> <p>13 A. Yes.</p> <p>14 Q. Was there only one reviewer for purposes of your paper?</p> <p>15 A. Yes, Reviewer: 1.</p> <p>16 Q. In what I marked as Exhibit Number 15 is Reviewer 1's</p> <p>17 comment after you made changes to your paper?</p> <p>18 A. Correct.</p> <p>19 Q. So the peer review for this article had one reviewer,</p> <p>20 correct?</p> <p>21 A. No, I don't know.</p> <p>22 Q. Did you get comments back from any other reviewer?</p> <p>23 A. I review comments, I review manuscripts for many</p> <p>24 journals. If you have no comments or if you have good</p> <p>25 comments, I don't need to show them.</p>	<p style="text-align: right;">Page 176</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. I'm going to mark as Exhibit Number 16 a copy of the</p> <p>3 expert report for you we were provided in this case.</p> <p>4 Is Exhibit Number 16 your expert report in this case?</p> <p>5 A. Yes.</p> <p>6 Q. There are large portions of the manuscript that are</p> <p>7 identical to your report, correct?</p> <p>8 A. I don't know about large, but based on it, yes.</p> <p>9 Q. Which was prepared first, the manuscript or the report?</p> <p>10 A. This is November, and the manuscript was September, so</p> <p>11 the manuscript was first.</p> <p>12 Q. Did you conduct the experiments that are described in</p> <p>13 the manuscript for Beasley Allen?</p> <p>14 A. Say that again, please.</p> <p>15 Q. Did you conduct the experiments that are in the</p> <p>16 manuscript for Beasley Allen?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: The experiment I did, I did it</p> <p>19 in my lab for me.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. Was the work that you did on -- in conducting the</p> <p>22 experiments and doing the manuscript independent of</p> <p>23 Beasley Allen or any counsel for Plaintiffs?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: The work that I did in the lab,</p>
<p style="text-align: right;">Page 175</p> <p>1 Q. Do you know how many reviewers --</p> <p>2 A. No knowledge.</p> <p>3 Q. Let me finish -- do you know how many reviewers</p> <p>4 Reproductive Sciences had for your manuscript?</p> <p>5 A. No.</p> <p>6 MR. HEGARTY: Let's go off the record real</p> <p>7 quick. I need to take just a quick break and we'll be</p> <p>8 right back.</p> <p>9 THE VIDEOGRAPHER: Going off the record at</p> <p>10 2:23 p.m.</p> <p>11 (A short recess was taken.)</p> <p>12 THE VIDEOGRAPHER: We're back on the record</p> <p>13 at 2:28 p.m.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Dr. Saed, are there any other communications between</p> <p>16 you and the editors of Reproductive Sciences that we've</p> <p>17 not talked about today?</p> <p>18 A. Not that I'm aware of.</p> <p>19 Q. Do you know when your article is supposed to be</p> <p>20 published?</p> <p>21 A. I don't know.</p> <p>22 SAED DEPOSITION EXHIBIT NUMBER 16,</p> <p>23 EXPERT REPORT,</p> <p>24 WAS MARKED BY THE REPORTER</p> <p>25 FOR IDENTIFICATION</p>	<p style="text-align: right;">Page 177</p> <p>1 no one has any interference in how it's designed, what</p> <p>2 the method should be used, how to analyze the data, how</p> <p>3 to write the manuscript, all that is all mine.</p> <p>4 UNIDENTIFIED ATTORNEY: Objection,</p> <p>5 nonresponsive.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Going back to my question, was the experiment you</p> <p>8 conducted and the manuscript that you wrote independent</p> <p>9 of your work with Beasley Allen in this litigation?</p> <p>10 MS. O'DELL: Objection to the form.</p> <p>11 THE WITNESS: So I was paid for my time as a</p> <p>12 consultant, but this work was funded by my lab.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. But going back to the experiments that you did and the</p> <p>15 manuscript that you wrote, were those separate -- was</p> <p>16 that a separate piece of work than what you're doing</p> <p>17 with Beasley Allen?</p> <p>18 MS. O'DELL: Object to the form, asked and</p> <p>19 answered.</p> <p>20 THE WITNESS: Separate means -- what do you</p> <p>21 mean by separate?</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Separate means unrelated.</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: Yeah, we're -- I'm hired as a</p>

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<p style="text-align: right;">Page 178</p> <p>1 witness expert in talc, ovarian cancer and oxidative</p> <p>2 stress, and I am doing work in my lab related to the</p> <p>3 consulting that what I'm doing with Beasley Allen.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. So was the work that you did in doing the tests and</p> <p>6 preparing the manuscript independent of your</p> <p>7 relationship with Beasley Allen?</p> <p>8 MS. O'DELL: Objection, asked and answered.</p> <p>9 THE WITNESS: I still don't understand the</p> <p>10 independent type.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Well, was it done --</p> <p>13 A. Can you reformat the question, please.</p> <p>14 Q. Well, was that work separate and unrelated to your work</p> <p>15 with Beasley Allen?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: It was separate, not -- it is</p> <p>18 related, so I don't know about what separate means, but</p> <p>19 it is related, yes, but in what caliber it's related,</p> <p>20 that's what I want to emphasize. They have no saying</p> <p>21 in any of the work that has been done here.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Would you have done this same work if you were not a</p> <p>24 consultant for Beasley Allen?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 180</p> <p>1 A. Because the whole news and the whole media is all about</p> <p>2 Johnson & Johnson product.</p> <p>3 Q. Did you choose Johnson's Baby Powder because that</p> <p>4 product is in this litigation?</p> <p>5 A. Not in this litigation, but for me, because of the</p> <p>6 media and all these reports that I've been reading and</p> <p>7 the association of woman using Johnson & Johnson Baby</p> <p>8 Powder with increased risk of ovarian cancer.</p> <p>9 Q. Within your lab notebooks, where are the tests that you</p> <p>10 conducted with Fisher Scientific talcum powder?</p> <p>11 A. I can show it to you.</p> <p>12 Q. Okay. You're looking at Exhibit Number 2, the lab</p> <p>13 notebook for the experiments reflected in your --</p> <p>14 MS. O'DELL: I think it's Exhibit 3.</p> <p>15 THE WITNESS: That's Fisher.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. I'm sorry. So Exhibit Number 3, which is the lab</p> <p>18 notebook for the pilot study involved Fisher --</p> <p>19 A. Correct.</p> <p>20 Q. -- talc?</p> <p>21 A. Talc.</p> <p>22 Q. The only talc tested as reflected in Exhibit Number 2</p> <p>23 is Johnson & Johnson, Johnson's Baby Powder?</p> <p>24 A. This one here, initially we used both, and then we</p> <p>25 stopped using Fisher and we continued using Johnson &</p>
<p style="text-align: right;">Page 179</p> <p>1 THE WITNESS: I would have done the same type</p> <p>2 of rigorous testing because this is my primary focus of</p> <p>3 my laboratory, and anything that is related to</p> <p>4 inflammation, oxidative stress, and ovarian cancer, it</p> <p>5 is what we like to do in our lab.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Your experiments involved Johnson's Baby Powder,</p> <p>8 correct?</p> <p>9 A. Correct.</p> <p>10 Q. Where did you purchase the Johnson's Baby Powder that</p> <p>11 you used?</p> <p>12 A. Walgreen across the street.</p> <p>13 Q. Why did you choose to use Johnson's Baby Powder in your</p> <p>14 experiment?</p> <p>15 A. Because I want to see if the use of baby powder, talcum</p> <p>16 powder, has any biological effect on ovarian cancer</p> <p>17 cells.</p> <p>18 Q. Why did you choose the Johnson's Baby Powder brand?</p> <p>19 A. I chose Johnson & Johnson baby powder and I chose</p> <p>20 Fisher.</p> <p>21 Q. Why did you choose the Johnson Baby Powder brand versus</p> <p>22 another brand of talcum powder product?</p> <p>23 A. I chose Fisher.</p> <p>24 Q. Why did you choose Johnson's Baby Powder over another</p> <p>25 commercially available baby powder?</p>	<p style="text-align: right;">Page 181</p> <p>1 Johnson.</p> <p>2 Q. Is there any reference in -- to testing Fisher talcum</p> <p>3 powder in Exhibit Number 2?</p> <p>4 A. I can't remember.</p> <p>5 Q. Well, the first page of your -- strike that.</p> <p>6 MS. O'DELL: Just for the record, can we note</p> <p>7 the page it's turned to in Exhibit 3, what page is</p> <p>8 that, in the lab notebook?</p> <p>9 THE WITNESS: Okay.</p> <p>10 MS. O'DELL: What page is it turned to?</p> <p>11 MR. HEGARTY: It's now on Pages 38 and 39.</p> <p>12 MS. O'DELL: Okay.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. If you look at Page 5 of your manuscript.</p> <p>15 A. Methodology?</p> <p>16 Q. Not of your report, your manuscript, that's Exhibit 7.</p> <p>17 A. Page 5.</p> <p>18 Q. Page 5.</p> <p>19 A. Okay.</p> <p>20 Q. At the top you say Treatment of cells. Talcum powder</p> <p>21 (Fisher Scientific, Catalog #T4-500, Lot#166820) or</p> <p>22 baby powder, then referencing Johnson & Johnson, was</p> <p>23 dissolved in DMSO, et cetera. Do you see where I'm</p> <p>24 reading?</p> <p>25 A. Yes.</p>

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<p style="text-align: right;">Page 182</p> <p>1 Q. Where in your manuscript do you report the results from</p> <p>2 your tests done on Fisher Scientific talcum powder?</p> <p>3 A. We didn't. This is for the previous abstracts that we</p> <p>4 used which is this.</p> <p>5 Q. So none of the data reported in your manuscript was</p> <p>6 data from experiments involving Fisher Scientific</p> <p>7 talcum powder?</p> <p>8 A. In this manuscript, all the data here, as far as I</p> <p>9 remember, they're all done with Johnson & Johnson.</p> <p>10 Q. Did you run the exact same tests that you report in</p> <p>11 your manuscript with Fisher Scientific talcum powder?</p> <p>12 A. No, we only did this with Fisher, which is PCR.</p> <p>13 MS. O'DELL: And what are you pointing to,</p> <p>14 Doctor, just so the record --</p> <p>15 THE WITNESS: Which is the preliminary</p> <p>16 studies that we used to publish for our SRI abstract</p> <p>17 which was presented March of 2018. There was only one</p> <p>18 component, which is PCR, and some few fact -- and some</p> <p>19 few markers. This is -- this was not an extensive and</p> <p>20 comprehensive study as the one described here. This is</p> <p>21 just preliminary to show there is an effect or there is</p> <p>22 no effect.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. What prooxidant or anti-oxidant --</p> <p>25 MS. O'DELL: It's confusing because you're</p>	<p style="text-align: right;">Page 184</p> <p>1 Powder?</p> <p>2 A. Okay. So I'm now referring to this, what's this --</p> <p>3 Q. Exhibit 2.</p> <p>4 A. Exhibit 2 and I did --</p> <p>5 MS. O'DELL: Page --</p> <p>6 THE WITNESS: Here sections PCR, I did ELISA.</p> <p>7 MS. O'DELL: What page does ELISA begin on?</p> <p>8 THE WITNESS: 53.</p> <p>9 MS. O'DELL: Okay.</p> <p>10 THE WITNESS: I did -- all labeled here what</p> <p>11 we did. SNP analysis --</p> <p>12 MS. O'DELL: What page? Starts --</p> <p>13 THE WITNESS: 102.</p> <p>14 MS. O'DELL: Okay.</p> <p>15 THE WITNESS: I did MTT.</p> <p>16 MS. O'DELL: What page?</p> <p>17 THE WITNESS: 106. And statistics final. So</p> <p>18 that's all done with J & J Baby Powder.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Does Exhibit Number 3 contain all the data of your PCR</p> <p>21 tests for Fisher Scientific talcum powder?</p> <p>22 A. Sorry, one more time, please.</p> <p>23 Q. Does Exhibit Number 3 contain all of the data of your</p> <p>24 PCR tests for Fisher Scientific talcum powder?</p> <p>25 A. That we reported this abstract at SRI, yes.</p>
<p style="text-align: right;">Page 183</p> <p>1 saying this, but you're referring to Exhibit 3, the</p> <p>2 study in Exhibit 3.</p> <p>3 THE WITNESS: This is Exhibit 3?</p> <p>4 MS. O'DELL: Yes.</p> <p>5 MR. FINDEIS: Which page of the exhibit?</p> <p>6 THE WITNESS: 3 is --</p> <p>7 MR. FINDEIS: It's open to which page --</p> <p>8 THE WITNESS: So this is Exhibit 3, Page 38</p> <p>9 onward.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Which pro-oxidant and anti-oxidant enzyme did you look</p> <p>12 at involving Fisher Scientific talcum powder?</p> <p>13 A. So they are all listed here. I'll tell you in one</p> <p>14 second. Catalase.</p> <p>15 MS. O'DELL: What page?</p> <p>16 THE WITNESS: Page 47, catalase GSR, GPX,</p> <p>17 GST, MPO, nitric oxide, SOD3.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. And you say you only ran --</p> <p>20 A. PCR.</p> <p>21 Q. And what test did you do beyond PCR with Johnson's Baby</p> <p>22 Powder?</p> <p>23 A. Sorry, I just want to make sure that they're all here,</p> <p>24 okay. So, sorry, what's the question?</p> <p>25 Q. What tests did you do besides PCR with Johnson's Baby</p>	<p style="text-align: right;">Page 185</p> <p>1 Q. In your manuscript you report the enzyme data after 72</p> <p>2 hours.</p> <p>3 A. Enzyme?</p> <p>4 Q. I'm sorry, the protein data after 72 hours.</p> <p>5 A. No, I didn't.</p> <p>6 Q. What did you report after 72 hours?</p> <p>7 A. The effect of treatment after 72 hours. That's totally</p> <p>8 different.</p> <p>9 Q. Why did you choose 72 hours?</p> <p>10 A. It was from a previous paper, one of those two, 72</p> <p>11 hours, they did 48 hours, 72 hours, and I picked 72</p> <p>12 because there is data showing very similar, I can't</p> <p>13 remember the reference of it.</p> <p>14 Q. In your report you describe the results of your tests</p> <p>15 only up to 48 hours, correct?</p> <p>16 A. Where is it, my report --</p> <p>17 Q. Over on Page 14.</p> <p>18 A. Page 14.</p> <p>19 Q. In the section Treatment of Cells.</p> <p>20 A. Where does it say that? Here? Treatment of cells.</p> <p>21 Yeah, this is not accurate, 72 hours, this is a typo.</p> <p>22 Q. So you're saying that the reference to 48 hours in</p> <p>23 Exhibit Number -- what is that marked as, your report?</p> <p>24 MS. O'DELL: 16.</p> <p>25 BY MR. HEGARTY:</p>

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<p>1 Q. 16, so you're saying that the reference to 48 hours in</p> <p>2 Exhibit Number 16 is incorrect and it should be 72</p> <p>3 hours?</p> <p>4 A. Correct, because we did all the work with 72 hours.</p> <p>5 Q. Did you try other durations that are not reported in</p> <p>6 your report or manuscript?</p> <p>7 A. No.</p> <p>8 Q. At the bottom of Page 8 of your manuscript, Exhibit 7.</p> <p>9 A. Exhibit 7, that's Exhibit 8, oh, I have two, two</p> <p>10 manuscripts.</p> <p>11 Q. 7 and 8 are identical.</p> <p>12 A. Okay.</p> <p>13 Q. Bottom of Page 7.</p> <p>14 A. Page 7.</p> <p>15 Q. You made reference to this before to citing to</p> <p>16 something called the peristaltic pump; do you see that?</p> <p>17 A. Page 7.</p> <p>18 Q. Page 8.</p> <p>19 A. Oh, sorry, Page 8, I heard 7, sorry. The last</p> <p>20 sentence.</p> <p>21 Q. Yes, second to the last line.</p> <p>22 A. Feature of uterus, yes.</p> <p>23 Q. That reference is not in your expert report.</p> <p>24 A. This is my paper, okay. So let's see.</p> <p>25 Q. Right, but my question is that the reference to the</p>	<p>1 part of your manuscript to 8 through 10. Did counsel</p> <p>2 for Beasley Allen provide those references to you?</p> <p>3 A. Absolutely not.</p> <p>4 Q. So is it your testimony that you came up with -- that</p> <p>5 you decided on your own to make reference to the</p> <p>6 peristaltic pump in your manuscript?</p> <p>7 A. This is not I decide on my own. This is like a</p> <p>8 collective reading of my reading throughout the whole</p> <p>9 literature. It's not just -- so the hypothesis that we</p> <p>10 have been trying to address for the last 30 years of my</p> <p>11 lab is how -- what's the trigger, what's the initiator</p> <p>12 for ovarian cancer, and there are many hypotheses out</p> <p>13 there, and one of the hypotheses is that something come</p> <p>14 through the genital tract.</p> <p>15 Q. If you turn to Page 9 in your manuscript, you in the</p> <p>16 first sentence of the second paragraph, you say in this</p> <p>17 study, we have shown beyond doubt that talc alters key</p> <p>18 redox and inflammatory markers, et cetera. Do you see</p> <p>19 what I'm reading?</p> <p>20 A. Yes.</p> <p>21 Q. Have you ever used the phrase "beyond doubt" before in</p> <p>22 any published article of yours?</p> <p>23 A. I believe I did.</p> <p>24 Q. Can you cite for me one where you use that phrase?</p> <p>25 A. Not now.</p>
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<p>1 peristaltic pump is nowhere in Exhibit Number 16, your</p> <p>2 expert report. Why did you not include that in your</p> <p>3 expert report?</p> <p>4 A. Is it not included? I don't know, I trust you.</p> <p>5 MS. O'DELL: Take a look.</p> <p>6 THE WITNESS: Let me take a look. So Number</p> <p>7 8 is -- this is the manuscript, where are the</p> <p>8 references? So do I have the references here?</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. I'll represent, Doctor, that it's not in there. Do you</p> <p>11 recall when you came across a reference to this phrase</p> <p>12 the peristaltic pump?</p> <p>13 MS. O'DELL: Objection to the form.</p> <p>14 THE WITNESS: Okay, sorry.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Yes, you do you recall when in the writing process for</p> <p>17 your manuscript you came across a reference to this</p> <p>18 thing called a peristaltic pump?</p> <p>19 MS. O'DELL: Objection to form.</p> <p>20 THE WITNESS: If I recall where I read this</p> <p>21 manuscript, this reference?</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Yes, and when.</p> <p>24 A. No, I don't remember.</p> <p>25 Q. Were you -- strike that. You made references at that</p>	<p>1 Q. It's true, though, that whatever you found and reported</p> <p>2 in your article was under the conditions of your</p> <p>3 experiment, correct?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: Can you --</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Everything you describe in this manuscript occurred</p> <p>8 under the conditions of your experiments, correct?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: So occurred means -- okay, so</p> <p>11 my response to this, all the experiments that has been</p> <p>12 performed here, they were performed according to the</p> <p>13 standard protocols that we have extensively published</p> <p>14 with.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. The statement that you make there is based on the</p> <p>17 results of your cell studies, correct?</p> <p>18 A. My cell studies, yes.</p> <p>19 Q. It's not based on any data from in vivo studies,</p> <p>20 correct?</p> <p>21 MS. O'DELL: Objection, form.</p> <p>22 THE WITNESS: There is no need.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. That's not my question. My question is those</p> <p>25 statements are not based on any in vivo data, correct?</p>

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<p style="text-align: right;">Page 190</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: So those, again, those results,</p> <p>3 the result, no, this is -- this is what we have shown</p> <p>4 in this manuscript, that's not my opinion of the whole</p> <p>5 situation. So this -- the basis of the sentence is --</p> <p>6 came from the results, the experiments that we did that</p> <p>7 we described here.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. Those results have not been shown in any in vivo</p> <p>10 situation, whether it's human or animal, correct?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: Similar outcome have been shown</p> <p>13 in -- before, yes.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Well, cite for me the published articles reporting the</p> <p>16 same results that you got in an in vivo model.</p> <p>17 MS. O'DELL: Objection, form.</p> <p>18 THE WITNESS: There was no any in vivo</p> <p>19 studies done at the molecular level. This is -- my</p> <p>20 study was the first comprehensive study that actually</p> <p>21 does that.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. What you found was in cell cultures.</p> <p>24 A. These are ovarian cancer cells from patients.</p> <p>25 Q. These are not ovarian cancer cells -- these are not</p>	<p style="text-align: right;">Page 192</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. What published literature reports finding the same</p> <p>3 things you report in this study in an animal model?</p> <p>4 A. Not the same things, similar things.</p> <p>5 Q. I'm asking --</p> <p>6 A. Same exact?</p> <p>7 Q. I'm asking can you cite for me any published literature</p> <p>8 reporting the same findings that you report in this</p> <p>9 article in an in vivo model?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: Again, I repeat the same thing,</p> <p>12 I say I have seen work that has been done in vivo using</p> <p>13 animals, different type of animals, that show an</p> <p>14 association of talcum powder to increased risk of</p> <p>15 ovarian cancer. My work that has been done here in</p> <p>16 cell lines is not many laboratory have done this in</p> <p>17 ovarian cancer because this is our specialty, this is</p> <p>18 what we do. So we don't have -- part of it is done</p> <p>19 probably like oxidative stress as collective like, for</p> <p>20 example, some manuscripts, they measure hydrogen</p> <p>21 peroxide as a marker of oxidative stress, so for</p> <p>22 experts in oxidative stress, you need to do more than</p> <p>23 just that. So I have seen in animals where there are</p> <p>24 some biological effects in vivo.</p> <p>25</p>
<p style="text-align: right;">Page 191</p> <p>1 normal ovarian cancer cells, correct?</p> <p>2 A. Some are, yes.</p> <p>3 Q. Well, they've been immortalized, correct?</p> <p>4 A. The normal variance they have been immortalized.</p> <p>5 They're sold as such.</p> <p>6 Q. The data that you report in your manuscript has never</p> <p>7 been reported in an in vivo situation, correct?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: So, again, using -- I have seen</p> <p>10 reports in vivo in animals that have shown the</p> <p>11 association of the talc with inflammation, yes.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. I'm talking about the very results that you report in</p> <p>14 your study --</p> <p>15 A. I don't think anybody did them.</p> <p>16 MS. O'DELL: Let him finish.</p> <p>17 MR. HEGARTY: Let me finish the question.</p> <p>18 MS. O'DELL: Let me object.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. You cannot cite to any published literature showing the</p> <p>21 same results that you found in your cell studies in any</p> <p>22 in vivo model, animal or human, correct?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: I have seen in animals, yes.</p> <p>25</p>	<p style="text-align: right;">Page 193</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. I'm talking about the biological effects you report in</p> <p>3 your manuscript.</p> <p>4 A. Which include some of this.</p> <p>5 Q. What literature can you cite for me that has shown</p> <p>6 these same biological effects in an in vivo model?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. The same biological effects you report in your</p> <p>10 manuscript.</p> <p>11 MS. O'DELL: Object to the form, asked and</p> <p>12 answered.</p> <p>13 THE WITNESS: I guess I'm not understanding</p> <p>14 the question because, again, these are cell lines from</p> <p>15 ovarian cancer patients, and doing work with cell lines</p> <p>16 is the closest you can get to in vivo. If there is</p> <p>17 work that has been done to depict all the work I have</p> <p>18 done here, this is none, to my knowledge, but there are</p> <p>19 reports that clearly indicates an in vivo effect.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. What reports are you referring to?</p> <p>22 A. Animal studies.</p> <p>23 Q. Cite for me the author or name of the animal studies</p> <p>24 you're referring to.</p> <p>25 MR. DONATH: Move to strike, nonresponsive.</p>

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<p style="text-align: right;">Page 194</p> <p>1 THE WITNESS: So, yeah, I think I referenced 2 some animal studies work here. Let's see. This is the 3 manuscript? I'm trying to find references. Yes. 4 Where is that paper? I can't remember this. I know 5 it's in the report. Yeah, it's right here, sorry. I 6 know I referenced it here. 7 BY MR. HEGARTY: 8 Q. How much more time do you need, Doctor? 9 A. It's been a while, so I need to find out exactly where 10 this is, but I know it's here. So it is some cited in 11 reference 50, but that's not the author -- that's not 12 the original reference, this is a cross-reference. 13 Q. You said cited in 50? 14 A. Number 50, but that's a cross-reference, if I recall 15 correctly. 16 Q. You need more time? 17 A. I do. I'm trying to look for it. 18 Q. Let's go off the record. 19 THE VIDEOGRAPHER: Going off the record at 20 2:57 p.m. 21 (An off-the-record discussion was held.) 22 THE VIDEOGRAPHER: Back on the record at 2:59 23 p.m. 24 BY MR. HEGARTY: 25 Q. Doctor, when we went off the record momentarily you</p>	<p style="text-align: right;">Page 196</p> <p>1 rats and mice, not the ovaries, correct? 2 A. No, it was summarize a review of everything, the actual 3 study, yes. 4 Q. The NTP didn't look at ovarian cancer, correct? 5 A. I'm not sure. I read from that study that they have 6 summary, summary, and somewhere there I read that there 7 was in vivo association of the talcum powder use with 8 ovarian cancer. So that's called reference reference. 9 Q. Your report -- 10 A. May I add something? I also read it somewhere else, I 11 cannot remember right now. 12 Q. Your report in your manuscript say that you in your 13 experiments found genotype switches at 72 hours; is 14 that correct? 15 A. Genotype switches, what are you referring to? 16 MS. O'DELL: What page? 17 BY MR. HEGARTY: 18 Q. You report in your manuscript. 19 A. Which particular -- 20 Q. Well, let me ask you about your manuscript. Did your 21 manuscript report genotype switches at 72 hours? 22 A. The effect of talcum 72 hours induced SNP in genetic 23 mutations. 24 Q. And do you claim that those genetic mutations occurred 25 in all cells treated with talc, in your experiments?</p>
<p style="text-align: right;">Page 195</p> <p>1 were going through your references in your report to 2 identify any in vivo animal models that you claim show 3 the same results that you report in your manuscript. 4 Can you cite for us the publications that you contend 5 show the same results as your manuscript in an animal 6 model? 7 MS. O'DELL: Object to the form. 8 You may answer. 9 THE WITNESS: So I am responding that I read 10 in some references and reviews that there was an in 11 vivo animal studies that showed association of talcum 12 powder use with increased risk of ovarian cancer in 13 animal models, and the reference for that is in the NTP 14 studies. 15 BY MR. HEGARTY: 16 Q. That study did not measure the pro-oxidant and 17 anti-oxidant markers that you measure in your study, 18 correct? 19 A. They talk about oxidative stress in general, 20 inflammation in general. 21 Q. But they don't -- that study doesn't measure the 22 pro-oxidant or anti-oxidant markers that you report in 23 your study, correct? 24 A. That study, no. 25 Q. The NTP study concerned findings in the lungs of the</p>	<p style="text-align: right;">Page 197</p> <p>1 A. There is a table actually that summarize the results, 2 and it doesn't show it with all markers, so we can 3 refer to it, so if you look, for example -- 4 MS. O'DELL: What figure? 5 THE WITNESS: The figure Table 2, if you look 6 at GSR, GSR no effect, SOD3 no effect, catalase there 7 is an effect in some cells, not others, you can see 8 that A2780 has no effect, the talc treatment. 9 BY MR. HEGARTY: 10 Q. But with regard to the cells that it did have an 11 effect, SKOV-3, for example, with regard to -- 12 A. SKOV with regard to catalase, for example, has no 13 effect. 14 Q. With regard to -- 15 A. TOV112 with catalase there is an effect. 16 Q. And was that effect in all the cells tested with talc? 17 MS. O'DELL: Object to the form. 18 THE WITNESS: I don't understand your 19 question. 20 BY MR. HEGARTY: 21 Q. Well, don't you -- do you contend that those genotype 22 changes occurred in all cells treated with talc? 23 A. I didn't say that. 24 Q. Did that happen? 25 A. No. What I'm saying is if you treat the cell line,</p>

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<p style="text-align: right;">Page 198</p> <p>1 okay, TOV112, with talc for 72 hours, there will be an 2 increase, an acquisition of this mutation. Now, you're 3 asking if I determined whether all cells in that 4 population got this mutation. 5 Q. Correct. 6 A. The answer is I don't know. 7 Q. Are you able to determine the quantity of cells -- let 8 me back up. How many cells are in the culture? 9 A. Yeah, so this is DNA extracted from 1 million cells 10 treated with 100 microgram per ml of talcum powder. 11 Now, there is another way you can quantitate if we need 12 to proceed further with this. 13 Q. Are you able to estimate the volume of cells that this 14 genotype switch occurred in? 15 MS. O'DELL: Object to the form. 16 THE WITNESS: The volume? 17 BY MR. HEGARTY: 18 Q. Yes, the number. 19 MS. O'DELL: Object to form. 20 THE WITNESS: I just said, no, we can't. 21 This technique will tell you yes or no, doesn't tell 22 you how much -- how many, sorry. 23 BY MR. HEGARTY: 24 Q. So would it tell you, yes, if it -- (coughing in 25 room) -- only one of the 1 ml cells?</p>	<p style="text-align: right;">Page 200</p> <p>1 Q. What do you mean when you say induces significant 2 changes? What does that mean, what does the word 3 significant there mean? 4 A. Got you. So this means marginal change, it's not -- 5 here the words does not imply statistically significant 6 is that you're referring to, although the results were 7 statistically significant, this is referring to the 8 magnitude. 9 Q. And how do you define -- how did you define the 10 magnitude as significant? 11 A. You don't, many readers assume significant is 12 statistically significant. 13 Q. Was the choice of the word significant a subjective 14 word choice by you? 15 A. I chose this word because it applies that there is a 16 significant effect which I know it is. 17 Q. And when you say significant effect, what do you mean? 18 A. I mean both marginal and statistically significant. 19 Q. What does it mean to have a marginal effect? 20 A. Marked like, for example, it is not like 1 versus 1.35, 21 it is 1 versus 3, that's mean marginal. 22 Q. You say about the middle of that paragraph that in all 23 talc treated cells, do you see where I'm reading? 24 A. Yes. 25 Q. There was a significant dose-dependent increase in</p>
<p style="text-align: right;">Page 199</p> <p>1 MS. O'DELL: Object to the form. 2 THE WITNESS: Again, this is not 3 quantitative. This will tell you if there is a 4 mutation or there is no mutation. 5 BY MR. HEGARTY: 6 Q. Without regard to the number of cells the mutation 7 occurred in? 8 MS. O'DELL: Objection to the form. 9 THE WITNESS: Okay. I will repeat myself 10 again. This is -- this technique will tell you if 11 there are population of cells that acquired this 12 genotype. 13 BY MR. HEGARTY: 14 Q. Does it tell you the number of such a population? 15 A. I just said no. 16 Q. If you look at Page 2 of your abstract, I'm sorry, your 17 manuscript, the abstract, looking at the Abstract 18 Section, second line towards the end, you say here 19 we've demonstrated that talc induces significant 20 changes in key redox enzymes and enhances the 21 pro-oxidant state in normal and EOC cells. 22 A. Where are you reading? Sorry. 23 Q. The second line, towards the end of the second line. 24 A. Towards the end of the second line -- here, yes, I see 25 it I see it.</p>	<p style="text-align: right;">Page 201</p> <p>1 pro-oxidants iNOS, nitrate/nitrite, and MPO with a 2 concomitant decrease in anti-oxidants CAT, SOD, GSR, 3 and GPX. Do you see where I'm reading? 4 A. Yes. 5 Q. What do you mean when you use the phrase significant 6 there? 7 A. It is indicated by the P value, so once you have the P 8 value, that's -- indicates statistically significant. 9 Q. And when you say an increase and a decrease as compared 10 to what? 11 A. To untreated. It says all talc treated cells. 12 Q. There is no data that correlates your findings and your 13 experiments to ovarian cancer risk in humans, correct? 14 MS. O'DELL: Objection, form. 15 THE WITNESS: One more time, please. 16 BY MR. HEGARTY: 17 Q. Sure. There is no data that correlates your findings 18 in this manuscript to ovarian cancer risk in women, 19 correct? 20 MS. O'DELL: Objection to form. 21 THE WITNESS: So my data explain, explain and 22 actually classify and characterize epithelial ovarian 23 cancer cells to have a pro-oxidant state, and we were 24 the first lab to actually demonstrate that epithelial 25 ovarian cancer cells manifest a pro-oxidant state by</p>

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<p style="text-align: right;">Page 202</p> <p>1 increasing in these pro-oxidants that we have here and 2 decreasing the anti-oxidant that we studied. So this 3 is a -- I have written a review article about this, I 4 have written a book chapter about this, this is the 5 major focus of my lab is to characterize the ovarian 6 cancer cells as a pro-oxidant, that they manifest a 7 pro-oxidant state and we characterize it. 8 BY MR. HEGARTY: 9 Q. There is no data showing that these increases or 10 decreases increase the risk of ovarian cancer in women, 11 correct? 12 MS. O'DELL: Objection to form. 13 THE WITNESS: Okay, so there are data that -- 14 recent data that showing, for example, I'll give you an 15 example, myeloperoxidase is a marker of inflammation. 16 My lab was the first lab in the entire world to report 17 that myeloperoxidase is expressed by epithelial ovarian 18 cancer cells, although this marker is only supposed to 19 be a myeloid marker, which is a blood marker, a blood 20 cells marker, not a nonmyeloid. Several reports later 21 they confirm my finding, and not only that, other labs 22 have just -- they reported that the SNP that we use 23 here, it is correlated with increased risk of ovarian 24 cancer, that's reported. That's number one. 25 Another example, SOD, catalase, those two</p>	<p style="text-align: right;">Page 204</p> <p>1 BY MR. HEGARTY: 2 Q. And that's been recognized to be associated in a genome 3 wide significantly way? 4 MS. O'DELL: Object to the form. 5 THE WITNESS: I don't know what you mean by 6 genome wide. 7 BY MR. HEGARTY: 8 Q. Well, you're familiar with what the -- 9 A. SNP is -- 10 Q. -- GWAS -- 11 A. Yes. 12 Q. -- the GWAS study is, correct? Are you familiar with 13 that? 14 MS. O'DELL: Would you repeat the question? 15 I couldn't hear it. 16 BY MR. HEGARTY: 17 Q. I asked him if he's familiar with what GWAS is. 18 A. Yes. 19 Q. What is it? 20 A. It's the genome wide association where they list all 21 the SNPs and their frequency of occurrence and their 22 what they call it -- frequency of occurrence in general 23 population. 24 Q. And what SNPs in your manuscript have been associated 25 by the GWAS studies with ovarian cancer?</p>
<p style="text-align: right;">Page 203</p> <p>1 enzymes and one more -- okay, but for those two, I know 2 for a fact that their SNPs has also been reported to be 3 associated with increased risk of ovarian cancer in 4 human, so that's for the genotype. 5 For the markers, there are several studies in 6 the literature that talk about alteration of oxidative 7 stress and inflammation in ovarian cancer. Our lab, 8 other labs have published, repeatedly published this, 9 so this is, as far as I'm concerned, this is a fact for 10 me, we have documented this, others documented this, 11 and to confirm my work with a report from a different 12 lab saying there is this myeloperoxidase SNP minus 13 463AA correlates with increased risk of ovarian cancer, 14 and we have this to be the genotype that changes in 15 talc powder, that's incredible to me. 16 BY MR. HEGARTY: 17 Q. Identify the SNPs that you report in your manuscript 18 that have been shown to have reached genome wide 19 significance of association with ovarian cancer. 20 A. Risk. 21 MS. O'DELL: Object to form. 22 THE WITNESS: Risk, so the minus, the same 23 SNP that we use here, minus 63, 463, which is the MPO 24 SNP, this SNP is recognized to be associated with 25 increased risk of ovarian cancer in a human.</p>	<p style="text-align: right;">Page 205</p> <p>1 A. So this, okay, we're mixing up two things. I need to 2 clarify this. So the GWAS, they identify the SNP. 3 Then investigators after the SNP has been identified by 4 the GWAS, they pick that SNP and they say, hmm, there's 5 a lab that published that myeloperoxidase in ovarian -- 6 in epithelial ovarian cancer where it's not supposed to 7 be there, well, let's do this study where we see if 8 this SNP is indeed associated with increased risk of 9 ovarian cancer. So that's not part of the GWAS study. 10 They use the GWAS study information like I did it. 11 Q. That's not my question, Doctor. My question is which 12 of the SNPs that you report in your manuscript have 13 been shown to be associated with ovarian cancer by the 14 GWAS studies? 15 MS. O'DELL: Objection to form. 16 THE WITNESS: I just said what I have to say. 17 BY MR. HEGARTY: 18 Q. Well, none of the SNPs that you referred to in your 19 manuscript have been identified by the GWAS studies as 20 being associated with ovarian cancer risk, correct? 21 MS. O'DELL: Object to the form. 22 THE WITNESS: No, it's not correct because I 23 repeat again, the GWAS have no responsibility to tell 24 you, they don't do studies looking at association. 25 They just list SNP and prevalence in general</p>

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<p style="text-align: right;">Page 206</p> <p>1 population, very clear.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. So it's your contention that the GWAS, the genome wide</p> <p>4 significance of association doesn't list SNPs that are</p> <p>5 associated with ovarian cancer?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: What I'm saying is, to my</p> <p>8 understanding, GWAS is an information bank where you go</p> <p>9 and you say, okay, there is -- there exists a catalase</p> <p>10 SNP, which is this SNP, this specific sequence that is</p> <p>11 present in .01 percent of general population. Above</p> <p>12 that will be characterized as risk factor. So now in</p> <p>13 the GWAS they identified the MPO SNP, the catalase SNP,</p> <p>14 the SOD SNP, all SNPs that it's like an information</p> <p>15 bank where you go to to find your information and then</p> <p>16 you go and study them. I study them, others study</p> <p>17 them, different labs can study them, but they do it for</p> <p>18 us. It's like the gene sequencing bank, it's the same</p> <p>19 thing, same concept, protein sequence bank. I don't</p> <p>20 need necessarily to go and sequence the whole thing to</p> <p>21 understand, it's already sequenced for me.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. What does it mean for a SNP to reach genome wide</p> <p>24 significance?</p> <p>25 A. So there is a cutoff that they have in their website to</p>	<p style="text-align: right;">Page 208</p> <p>1 you reference in your manuscript and ovarian cancer.</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: So I'm not -- I am objecting to</p> <p>4 the word statistically significant, but I can identify</p> <p>5 several studies that, for example, looking at catalase</p> <p>6 SNP and its association with increased risk of ovarian</p> <p>7 cancer, myeloperoxidase SNP and its association with</p> <p>8 increased risk of ovarian cancer, there was one more</p> <p>9 I'm skipping, and so those two were definitely there.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Why do you object to my use of the phrase statistical</p> <p>12 significance?</p> <p>13 A. Because I am not sure if they did -- they did molecular</p> <p>14 study or they did a different type of study, so I'm</p> <p>15 just, you know, not familiar with the epidemiological</p> <p>16 studies that they performed.</p> <p>17 Q. Well, cite for me any studies that show, as you say, an</p> <p>18 association between MPO or CAT and ovarian cancer.</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: MPO?</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. Yes.</p> <p>23 A. The MPO SNP?</p> <p>24 Q. Yes.</p> <p>25 A. That's what we're talking about?</p>
<p style="text-align: right;">Page 207</p> <p>1 each based on epidemiological studies that there is</p> <p>2 association, if it increased over this level, it could</p> <p>3 be associated with diseases.</p> <p>4 Q. Which of the SNPs that you reference in your manuscript</p> <p>5 have been associated with ovarian cancer, in other</p> <p>6 words, which have reached genome wide significance?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: I can answer this. I know for</p> <p>9 a fact it's catalase, not only ovarian but also in</p> <p>10 breast cancer, and they are twins.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Any others?</p> <p>13 A. I'm not -- I can't remember the actual -- for me, the</p> <p>14 GWAS was an information bank where I get my -- the</p> <p>15 information I need to perform the studies, like me and</p> <p>16 others in the same situation.</p> <p>17 Q. Cite for me any published literature that is</p> <p>18 associated -- that has shown a clinical significant</p> <p>19 association between the SNPs that you reference in your</p> <p>20 paper and ovarian cancer.</p> <p>21 A. I'm sorry, one more time.</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Identify for me any published literature that shows a</p> <p>25 statistically significant association between the SNPs</p>	<p style="text-align: right;">Page 209</p> <p>1 Q. Yes.</p> <p>2 A. Yes, I can cite.</p> <p>3 Q. Cite for me a study.</p> <p>4 A. I don't remember it now, but there is study.</p> <p>5 Q. Did you cite it in your manuscript?</p> <p>6 A. I believe so. Let's talk -- let's see about where we</p> <p>7 talk about SNP. Okay, were the first to do this --</p> <p>8 sorry -- I would be very happy to provide you with</p> <p>9 these references that I mentioned, MPO and catalase and</p> <p>10 the SNP in ovarian cancer.</p> <p>11 Q. Can you cite for me here today any studies associating</p> <p>12 catalase or MPO with ovarian cancer?</p> <p>13 MS. O'DELL: Object to the form. You mean</p> <p>14 the SNP?</p> <p>15 THE WITNESS: I can't remember where I put</p> <p>16 it.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. How much time do you need to look, Doctor?</p> <p>19 A. See, I write this every day so I get so overwhelmed.</p> <p>20 Q. Let's go off the record.</p> <p>21 A. So we're looking for catalase SNP for --</p> <p>22 MS. O'DELL: Stay on, if you're -- do you</p> <p>23 need more time, Doctor, or are you --</p> <p>24 THE WITNESS: I'm trying to find it in my --</p> <p>25 MR. HEGARTY: Let's go off the record.</p>

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<p style="text-align: right;">Page 210</p> <p>1 THE WITNESS: I mean I may not even reference 2 it here so I don't know. 3 THE VIDEOGRAPHER: Going off the record at 4 3:23 p.m. 5 (An off-the-record discussion was held.) 6 THE VIDEOGRAPHER: We're back on the record 7 at 3:26 p.m. 8 BY MR. HEGARTY: 9 Q. Doctor, when we went off the record I asked you for any 10 studies associating catalase or MPO with ovarian 11 cancer. You've had a chance to look for such studies, 12 and what is your response? 13 A. So there's one study by Olson, et al., that was 14 published in Gynecology Oncology 2004. 15 Q. How do you spell his first name? 16 A. O-l-s-o-n, and it's looking at SOD and MPO SNP. There 17 is an increased risk of ovarian cancer. I couldn't 18 find the catalase one, but it is there, I can search 19 for it, it is hundred percent there. There is another 20 one looking at Superoxide dismutase published in JBC 21 Journal by Yumin, et al. 22 Q. How do you spell that? 23 A. Y-u-m-i-n, Hu, H-u. And there is one more which is 24 about catalase if you -- SNP. 25 Q. What is the date of the Yumin article?</p>	<p style="text-align: right;">Page 212</p> <p>1 am -- if you define lead author as corresponding author 2 or first author? 3 Q. First author. 4 A. Is Dr. Belotte, he was an M.D., Ph.D. trained in my 5 laboratory. I was his Ph.D. advisor. 6 Q. What year? What is the year of the article? 7 A. Oh, sorry, 2015. 8 Q. What is the name of the article? 9 A. Single Nucleotide Polymorphism in Catalase is Strongly 10 Associated With Ovarian Cancer Survival. 11 Q. So that article doesn't have anything to do with 12 ovarian cancer initiation, correct? 13 MS. O'DELL: Object to the form. 14 THE WITNESS: Is that another question? 15 BY MR. HEGARTY: 16 Q. Yes. 17 A. Saying -- 18 Q. In that article, it associated catalase with ovarian 19 cancer survival, correct? 20 A. Uh-huh. 21 Q. It didn't associate catalase with causing ovarian 22 cancer, correct? 23 MS. O'DELL: Object to the form. 24 THE WITNESS: So in this article what we did, 25 we actually, this is -- we identified the SNP and</p>
<p style="text-align: right;">Page 211</p> <p>1 A. What's the data? 2 Q. What's the date? 3 A. Oh, the date, I'm sorry. Can I look? 4 Q. Yes. 5 A. So the date was 2005. 6 Q. And then you believe there's an article that associates 7 catalase to ovarian cancer? 8 A. Yes. 9 Q. You can't recall that article sitting here today? 10 A. I have it here, it's Catalase Nucleotide SNP Strongly 11 Associated With Ovarian Cancer, this is by -- from our 12 lab and from another lab, also. 13 Q. What is the -- who is the first author? 14 A. From my lab? 15 Q. Well, you said -- 16 A. This second one, the second one is by -- so this is our 17 paper, and there's one here. 18 Q. When you say our paper, who's the lead author? 19 A. Okay. Can I just tell you the paper? So this is 20 published in -- it says The Effect of Catalase SNP and 21 Susceptibility to Ovarian Cancer, and this is by -- 22 published in -- doesn't -- it's in 2017, and it doesn't 23 tell me the journal, Journal of Obstetrics and 24 Gynecology, Volume 38, 2018, Issue 4. 25 And going back to your previous question, I</p>	<p style="text-align: right;">Page 213</p> <p>1 catalase that others also identified, and we looked at 2 the presence of the SNP in chemoresistance versus 3 sensitive looking at different parameters, and we 4 actually reversed the SNP using the CRISPR editing, 5 gene editing, and we induced apoptosis, so there was 6 like a survival mechanism. 7 BY MR. HEGARTY: 8 Q. Doctor, the article you actually cite and which you 9 included as an author found that with regard to the 10 seven selected SNP study, no association -- you found 11 no association with ovarian cancer risk, correct? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: Which article you talking 14 about? 15 BY MR. HEGARTY: 16 Q. The article with the lead author Belotte, Belotte. 17 A. Jimmy Belotte, okay, what about it? 18 Q. Your article looked at CAT, CYBA, GPX1, GSR, MnSOD, 19 MPO, and NOS2, correct? 20 A. Yes. 21 Q. You found doing the same kind of testing you did here 22 that none of those SNPs was associated with ovarian 23 cancer risk, correct? 24 MS. O'DELL: Object to the form. 25 THE WITNESS: No.</p>

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<p>1 MS. O'DELL: Excuse me. Object to the form. 2 If you need to see the paper -- 3 THE WITNESS: Yeah, it's been a while but -- 4 MS. O'DELL: If you need to see the paper. 5 SAED DEPOSITION EXHIBIT NUMBER 17, 6 RESEARCH ARTICLE, 7 WAS MARKED BY THE REPORTER 8 FOR IDENTIFICATION 9 BY MR. HEGARTY: 10 Q. I marked as Exhibit 17 the paper. 11 A. Very good. 12 Q. Show me in that paper where you found an association 13 with the listed SNPs and ovarian cancer risk. 14 A. Okay. So there is no -- this study we looked at, this 15 particular SNP and catalase that we found, the other we 16 found that they are not associated with survival, so 17 this study was basically looking at survival of ovarian 18 cancer. So this is not a study meant to study risk. 19 MR. KLATT: Objection, nonresponsive. 20 BY MR. HEGARTY: 21 Q. If you look over at Page 11 of your manuscript. 22 MS. O'DELL: Which page -- 23 MR. HEGARTY: It's Exhibit 7. 24 MS. O'DELL: Well, he just has one manuscript 25 in his hand. Do you know where we are, Doctor?</p>	<p>1 that it? And it's also in your notebook at 34 if you 2 both need it so. 3 THE WITNESS: Can I look at it? 4 BY MR. HEGARTY: 5 Q. Yes, go ahead and look at 34. 6 A. I can't remember if we did the same SNP in both 7 studies, so I just want to make sure that we did that, 8 because there are several SNPs for the same enzyme 9 reported in the GWAS. 10 Q. How long will it take you to look at -- you did the 11 same SNPs in the Belotte article as you did here? 12 A. I have to look at the accession numbers and compare 13 them. 14 Q. Well, we'll maybe get to that, but my question goes 15 back to your reference on Page -- 16 MS. O'DELL: 34. 17 MR. HEGARTY: Your reference to that article 18 on Page 11 of your manuscript, you quote that article 19 as saying that you examined several selected known gene 20 mutations corresponding to SNPs known to be associated 21 with altered enzyme activity and increased cancer risk. 22 What part of that Belotte article shows that the SNPs 23 that you examined are associated with increased cancer 24 risk? 25 THE WITNESS: So if you look at the table,</p>
Page 215	Page 217
<p>1 THE WITNESS: Page 11 -- 2 BY MR. HEGARTY: 3 Q. Yes, Page 11. The first sentence of the third 4 paragraph beginning To Elucidate the Mechanism, do you 5 see that? 6 A. Yes. 7 Q. You state later in that sentence, we have examined 8 selected known gene mutations corresponding to SNPs 9 known to be associated with altered enzymatic activity 10 and increased cancer risk. Do you see where I'm 11 reading? 12 A. To elucidate the mechanism, that paragraph? 13 Q. Yes. 14 A. Okay. 15 Q. And at the end of that sentence you cite Reference 28. 16 A. Okay. 17 Q. And Reference 28 is that Belotte article, correct? 18 A. 28 is Belotte, yes. 19 Q. Can you hand me the Belotte article back, please. 20 A. (Witness complied.) 21 Q. In the Belotte article you say of the seven selected 22 SNPs studied, no association with ovarian cancer risk 23 was found. That's what you found, correct, Doctor? 24 MS. O'DELL: Objection to form. If you need 25 to see Belotte -- do you have another copy, Mike, or is</p>	<p>1 Page 3, Dr. Belotte's article, there is a table here 2 that lists what is the SNP, what is the mean allele 3 frequency occurrence, the chromosomal equation, and if 4 it is known nucleotide switch, and the effect of 5 activity. So there are SNPs that affect activity of 6 the enzymes, and if they do, they are, according to our 7 findings, they are associated with anything that alters 8 oxidative stress to the pro-oxidant state can 9 contribute to increased risk. 10 BY MR. HEGARTY: 11 Q. But you in your paper, Exhibit 17, say that the SNPs 12 you studied showed no association with ovarian cancer 13 risk, correct? 14 A. Which one? 15 Q. The Belotte paper. 16 A. Oh, keep saying what paper. 17 Q. You look at the abstract. 18 A. So, again, we're looking at specific SNPs. 19 Q. Correct. 20 A. Right, so -- 21 Q. And in the specific -- 22 A. Some of the SNPs that we looked at when we did this 23 study, they were associated with survival of ovarian 24 cancer, that's what we tested. 25 Q. None of the SNPs --</p>

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<p style="text-align: right;">Page 218</p> <p>1 MR. KLATT: Nonresponsive.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Doctor, you also examined whether the SNPs reported in</p> <p>4 this study were associated with ovarian cancer risk,</p> <p>5 correct, not just survival?</p> <p>6 MS. O'DELL: Objection, form.</p> <p>7 THE WITNESS: Give me a moment to see, to</p> <p>8 refresh my memory. This is 2015, so I need to remember</p> <p>9 what we did. I have done many work.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. How much time do you need to study that article?</p> <p>12 A. Just -- okay, so in this study we only did survival,</p> <p>13 the Jimmy Belotte study, this is my -- yeah, so this</p> <p>14 here we only did analysis of survival.</p> <p>15 Q. Doctor, if you turn over to Page 6 of that article at</p> <p>16 the very bottom, third from -- third line from the</p> <p>17 bottom, you write that currently we demonstrated that</p> <p>18 there is no association between the selected SNPs and</p> <p>19 risk of developing ovarian cancer, citing Table 2,</p> <p>20 those are your words, correct?</p> <p>21 A. Yeah, Table 2 is, let's see --</p> <p>22 MS. O'DELL: What were you reading?</p> <p>23 MR. HEGARTY: The bottom of Page 6 of 12.</p> <p>24 THE WITNESS: Yeah, I see that.</p> <p>25</p>	<p style="text-align: right;">Page 220</p> <p>1 with it.</p> <p>2 MS. O'DELL: It is not.</p> <p>3 MR. KLATT: He's perfectly entitled to look</p> <p>4 things up to answer them, but it doesn't count against</p> <p>5 our time.</p> <p>6 MS. O'DELL: He's not looking things up.</p> <p>7 He's looking at the exhibit that had been placed before</p> <p>8 him.</p> <p>9 THE COURT REPORTER: Excuse me --</p> <p>10 (Simultaneous crosstalk.)</p> <p>11 MS. O'DELL: We are on the record.</p> <p>12 And, Doctor, if you are prepared to respond</p> <p>13 to the question, you may do so. If you need a minute,</p> <p>14 let us know that.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. How much time do you need to review the article,</p> <p>17 Doctor?</p> <p>18 A. I'm just asking you, please, where do you see in Table</p> <p>19 2.</p> <p>20 Q. I'm referring to your words at the bottom of Page 6</p> <p>21 that's referring over to Table 2, and I'm asking you is</p> <p>22 it your testimony that you did not investigate the</p> <p>23 association in this paper between these SNPs and</p> <p>24 ovarian cancer risk, is that your testimony?</p> <p>25 MS. O'DELL: Are you quoting a sentence?</p>
<p style="text-align: right;">Page 219</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Doctor, is it your testimony that in this study you did</p> <p>3 not investigate whether the SNPs listed in Table 2 were</p> <p>4 associated with ovarian cancer risk?</p> <p>5 MS. O'DELL: Object to the form.</p> <p>6 THE WITNESS: Let me just look at this,</p> <p>7 sorry.</p> <p>8 MR. HEGARTY: Let's go off the record.</p> <p>9 MS. O'DELL: He's just looking at the table.</p> <p>10 Ask him a question, he's entitled --</p> <p>11 MR. HEGARTY: Let's go off the record.</p> <p>12 MS. O'DELL: No, we're not.</p> <p>13 MR. HEGARTY: We're going off the record.</p> <p>14 MS. O'DELL: No, we're not.</p> <p>15 MR. KLATT: We're going to call Judge Pisano.</p> <p>16 MS. O'DELL: Wait a minute. Let me speak.</p> <p>17 If you ask the doctor about his manuscript, he is not</p> <p>18 required to have put to memory every word and table in</p> <p>19 the manuscript. If you ask him about something, he is</p> <p>20 entitled to look at it and reply completely. And to</p> <p>21 somehow suggest if he takes more than 15 seconds we're</p> <p>22 going off the record, that's ridiculous.</p> <p>23 MR. KLATT: It's every single time he's asked</p> <p>24 a question, he wants to look something up. This is</p> <p>25 slow walking the deposition, we're not going to put up</p>	<p style="text-align: right;">Page 221</p> <p>1 What sentence are you referring to?</p> <p>2 MR. HEGARTY: I'm not -- you're not taking</p> <p>3 this deposition of me. I'll let my question stand.</p> <p>4 MS. O'DELL: Object to the form of the</p> <p>5 question, it's unclear. If there's a specific sentence</p> <p>6 you're referring to in the manuscript, you said bottom</p> <p>7 of Page 6, so if there's something you're referring to,</p> <p>8 I'd ask you direct the witness to it.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. Can you answer my question, Doctor?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: Where is the -- can you</p> <p>13 please --</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Bottom of Page 6 for the second time.</p> <p>16 A. Yes.</p> <p>17 Q. I'm reading this to you, it says currently we</p> <p>18 demonstrated that there is no association between the</p> <p>19 selected SNPs and risk of developing ovarian cancer,</p> <p>20 Table 2. Do you see that?</p> <p>21 A. Yes.</p> <p>22 Q. Is it your testimony that this article did not</p> <p>23 investigate an association between the selected SNPs</p> <p>24 and ovarian cancer risk?</p> <p>25 A. In this study that we did with this number of people</p>

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<p style="text-align: right;">Page 222</p> <p>1 that we looked at, we found, okay, that the only</p> <p>2 catalase SNP is associated with ovarian cancer</p> <p>3 survival, none of the other SNPs were associated from</p> <p>4 these patients to increased risk of ovarian cancer.</p> <p>5 Q. Right.</p> <p>6 A. We only did 143, I believe, 94.</p> <p>7 Q. So the sentence that I read to you on Page 11 of your</p> <p>8 manuscript it's citation 28 is wrong, correct?</p> <p>9 MS. O'DELL: Objection to form.</p> <p>10 THE WITNESS: What's the citation?</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Well, you support the sentence that says we have</p> <p>13 examined selected known gene mutations corresponding to</p> <p>14 SNPs known to be associated with altered enzymatic</p> <p>15 activity and increased ovarian cancer risk citing 28.</p> <p>16 28 doesn't support a finding that the SNPs you tested</p> <p>17 show increased ovarian cancer risk, correct?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: What we -- again, this --</p> <p>20 what -- the SNPs that we are used here in this study,</p> <p>21 they were used in response to test the effect of talc</p> <p>22 treatment, talcum powder treatment to the genetic -- to</p> <p>23 the specific genetic mutations. Now, we link survival</p> <p>24 to risk, so, for example, if you look, most of our</p> <p>25 hypothesis --</p>	<p style="text-align: right;">Page 224</p> <p>1 answer it again.</p> <p>2 MS. O'DELL: You can go ahead and finish.</p> <p>3 Stop interrupting.</p> <p>4 THE COURT REPORTER: I cannot take</p> <p>5 everybody --</p> <p>6 MS. O'DELL: Here's my objection. The</p> <p>7 witness is being interrupted while he's trying to</p> <p>8 respond to the question, and so if there's a question</p> <p>9 pending the doctor is trying to answer, you cannot</p> <p>10 interrupt him.</p> <p>11 MR. HEGARTY: Well, the record's going to</p> <p>12 speak for itself as far as his nonresponsiveness to my</p> <p>13 question.</p> <p>14 MS. O'DELL: Were you finished with your</p> <p>15 answer?</p> <p>16 MR. HEGARTY: I withdrew the question.</p> <p>17 MS. O'DELL: Were you finished with your</p> <p>18 answer?</p> <p>19 THE WITNESS: So what I'm trying to tell you,</p> <p>20 I cannot remember that we did the same exact SNP in</p> <p>21 Jimmy Belotte study and this study.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. That was not my question. My question is specific to</p> <p>24 this study.</p> <p>25 A. To the Jimmy Belotte study.</p>
<p style="text-align: right;">Page 223</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. I object to it's nonresponsive. Doctor, you're not</p> <p>3 answering my question. I'm going to withdraw the</p> <p>4 question.</p> <p>5 MS. O'DELL: Don't cut him off if he's</p> <p>6 finishing --</p> <p>7 MR. HEGARTY: He's not finishing, he's</p> <p>8 answering something else.</p> <p>9 MS. O'DELL: He's trying to answer your</p> <p>10 question.</p> <p>11 MR. HEGARTY: I withdrew the question.</p> <p>12 Listen to my question, Doctor. Does the</p> <p>13 Belotte paper show that the SNPs you looked at are</p> <p>14 associated with increased cancer risk?</p> <p>15 THE WITNESS: Ovarian cancer risk.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Ovarian cancer risk.</p> <p>18 A. So what I'm trying to tell you, according to this</p> <p>19 paper, we only tested limited number of patients.</p> <p>20 Q. Listen to my question.</p> <p>21 A. And I'm not sure, I'm answering, trying to answer.</p> <p>22 Q. You're not answering the question. I'm going to</p> <p>23 withdraw the question.</p> <p>24 A. Can I finish?</p> <p>25 Q. I'm going to withdraw the question. I'm going to</p>	<p style="text-align: right;">Page 225</p> <p>1 Q. Correct.</p> <p>2 A. Yes.</p> <p>3 Q. And reading from your study in the abstract, starting</p> <p>4 on the third line it says we sought to evaluate the</p> <p>5 association of SNPs in key oxidant and anti-oxidant</p> <p>6 enzymes with increased risk in survival in epithelial</p> <p>7 ovarian cancer. So you agree in this study that you</p> <p>8 looked at certain specific SNPs with regard to</p> <p>9 increased risk of ovarian cancer, correct?</p> <p>10 A. Those SNPs, yes.</p> <p>11 Q. You found from your study that those SNPs were not</p> <p>12 associated with increased ovarian cancer risk, correct?</p> <p>13 A. Correct.</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: Correct.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Can you cite for me any study that has shown the SNPs</p> <p>18 you report, you discuss in your manuscript to occur in</p> <p>19 women using talc?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: That the SNP that we used in</p> <p>22 this study --</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. In the manuscript.</p> <p>25 A. In the manuscript, any of these SNPs has been</p>

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<p style="text-align: right;">Page 226</p> <p>1 associated with woman using talc?</p> <p>2 Q. Correct.</p> <p>3 A. I don't know.</p> <p>4 Q. Can you report -- can you cite for me any studies</p> <p>5 showing the enzyme activity that you report to have</p> <p>6 occurred with application of talc use to be in women</p> <p>7 using talc?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: So if other people have done</p> <p>10 the same work that I did with samples from woman who</p> <p>11 got ovarian cancer and they used talc?</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Can you cite for me any study showing your findings as</p> <p>14 to decrease in the expression of anti-oxidant enzymes</p> <p>15 and the increased expression in pro-oxidant enzymes in</p> <p>16 women using talc?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: I can cite to you several</p> <p>19 studies that have indicated the pro-oxidant state and</p> <p>20 the anti-oxidant state in several human, animal, in</p> <p>21 vitro studies of cells with ovarian cancer.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. That's not my question. My question, Doctor, is can</p> <p>24 you cite for me any studies showing your findings as to</p> <p>25 decrease in the expression of anti-oxidants and the</p>	<p style="text-align: right;">Page 228</p> <p>1 THE WITNESS: So other than the similarities</p> <p>2 in the mechanism, direct link with woman who use</p> <p>3 specific talc on that day, I don't know.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. Let's take a break.</p> <p>6 THE VIDEOGRAPHER: We're going off the record</p> <p>7 at 3:49 p.m.</p> <p>8 (A short recess was taken.)</p> <p>9 THE VIDEOGRAPHER: We're back on the record</p> <p>10 at 4:05 p.m.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Doctor, in looking at your manuscript again Page 13,</p> <p>13 I'm sorry, in looking at your report, sorry, Page 13,</p> <p>14 you describe the cell lines that you use for purposes</p> <p>15 of your experiments, is that correct?</p> <p>16 A. In the cell lines section?</p> <p>17 Q. Yes.</p> <p>18 A. Yes.</p> <p>19 Q. Which of those cell lines -- strike that. What sub</p> <p>20 type of ovarian cancer are these cells?</p> <p>21 A. Sorry. Unknown.</p> <p>22 Q. You don't know whether they're high grade, serous,</p> <p>23 endometrioid, mucinous, clear cell?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: When we purchased these cell</p>
<p style="text-align: right;">Page 227</p> <p>1 increase expression of pro-oxidants in women using talc</p> <p>2 on their bodies?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I don't know.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Can you cite for me any study showing the results --</p> <p>7 showing any of the results in your manuscript to</p> <p>8 occur -- to have occurred in women applying talc to</p> <p>9 their bodies?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: So let's go back. I have --</p> <p>12 this is important. Good question. My answer is</p> <p>13 simple. The fact that you -- that talc has been shown</p> <p>14 to elicit a molecular response, that is same response</p> <p>15 that you get in the pro-oxidant state that has been</p> <p>16 published by many people in ovarian cancer, that is, to</p> <p>17 my understanding, link talcum powder to increased risk</p> <p>18 of ovarian cancer.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Object as nonresponsive. Listen to my question,</p> <p>21 Doctor. My question is can you cite for me any studies</p> <p>22 showing the findings you report in your manuscript or</p> <p>23 in your expert report in this case to have occurred or</p> <p>24 been reported in women using talc on their bodies?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 229</p> <p>1 lines from ATCC, they have described them where they</p> <p>2 isolated from and what's the patient and all that, but</p> <p>3 I can't remember exactly which one is which.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. So are any of these cell lines or have any of these</p> <p>6 cell lines been qualified as high grade serous ovarian</p> <p>7 cancer cell lines?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: I can't remember.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. You say that your experiments used what you call --</p> <p>12 well, you say immortalized human fallopian tube</p> <p>13 epithelial cells FT33, is that right?</p> <p>14 A. FT33, yes.</p> <p>15 Q. Those, as you note in your paper, are immortalized cell</p> <p>16 lines, correct?</p> <p>17 A. Correct.</p> <p>18 Q. And such cell lines are considered abnormal or</p> <p>19 precancerous, isn't that correct?</p> <p>20 A. Not necessarily.</p> <p>21 Q. Well, they were modified to essentially live forever,</p> <p>22 correct?</p> <p>23 A. No, it's not correct.</p> <p>24 Q. Well --</p> <p>25 A. They're modified so they can be consistent.</p>

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<p style="text-align: right;">Page 230</p> <p>1 Q. But normal cells are not immortalized cells, correct?</p> <p>2 A. Correct.</p> <p>3 Q. And to immortalize a cell, you have to fundamentally</p> <p>4 change the cell, correct?</p> <p>5 A. Not correct.</p> <p>6 Q. Well, you typically have to induce something like the</p> <p>7 SV40 DNA tumor virus, correct?</p> <p>8 A. Correct.</p> <p>9 Q. And that alters the makeup of the cells, correct?</p> <p>10 A. Not necessarily.</p> <p>11 Q. Well, it essentially shuts off, for example, the P53</p> <p>12 cell, P53 marker, correct?</p> <p>13 A. Oncogene.</p> <p>14 Q. Oncogene, correct? And these cells carry essentially a</p> <p>15 functional equivalent of four critical oncogenes,</p> <p>16 oncogenic mutations in tumor suppression pathways that</p> <p>17 have been implicated in ovarian carcinogenesis,</p> <p>18 correct?</p> <p>19 A. Let me explain to you, I have been conducting research</p> <p>20 all my career using primary cultures of cells</p> <p>21 established from -- fresh from patient tissues as well</p> <p>22 as immortalized cell lines. The problem with using</p> <p>23 primary cultures, the results cannot be reproduced,</p> <p>24 because if you passage the cells, they change their</p> <p>25 phenotype with passages, so researcher agreed upon this</p>	<p style="text-align: right;">Page 232</p> <p>1 THE WITNESS: So, again, I said one of the</p> <p>2 cell lines, I can't remember which, is from high grade,</p> <p>3 high serous grade. The others are not clearly</p> <p>4 identified by the ATCC information provided. But that</p> <p>5 was not my point of my research. My point of my</p> <p>6 research is to see does talcum powder induces or alter</p> <p>7 oxidative stress markers that we know and we have</p> <p>8 published in several documents that is associated with</p> <p>9 ovarian cancer.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Can you cite for me any data showing that the</p> <p>12 concentrations of exposure that you used in your</p> <p>13 experiments are similar or the same as would be</p> <p>14 occurring in women using talc on the perineum?</p> <p>15 A. I can't tell you that.</p> <p>16 Q. Can you cite for me any data that shows that the level</p> <p>17 of concentration of talc that you used in your cell</p> <p>18 studies has ever occurred in women applying talc to</p> <p>19 their bodies?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: My response to this is I</p> <p>22 consider, according to my studies, I consider talc</p> <p>23 powder to be carcinogenic, and in my understanding of</p> <p>24 biology of cancer, there is no minimum threshold beyond</p> <p>25 which you are protected from developing cancer. Every</p>
<p style="text-align: right;">Page 231</p> <p>1 is the best utility that you have in vitro, that you</p> <p>2 can use immortalized cell lines, at least they are</p> <p>3 all -- their machinery of gene expression is controlled</p> <p>4 and it's consistent and reproducible with passages.</p> <p>5 Q. Did you do anything to correlate the cell lines you</p> <p>6 used to, for example, serous ovarian cancer cells in</p> <p>7 vivo?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: Yeah, so from patients, this is</p> <p>10 our -- my next interest to do, to go -- I have</p> <p>11 extensive experience and expertise in isolating primary</p> <p>12 cultures at zero passages from patients' tissues,</p> <p>13 blood, and the fluid, and it is in my mind to do</p> <p>14 further testing of talcum powder and see if we can</p> <p>15 reproduce the effect on those cells.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. When you say those cells, what do you mean?</p> <p>18 A. The primary freshly established cells from different</p> <p>19 histotypes of ovarian cancer.</p> <p>20 Q. Did you do anything --</p> <p>21 A. Because this is not available commercially.</p> <p>22 Q. Did you do anything to establish that the cell lines</p> <p>23 you were looking at are, for example, high grade</p> <p>24 serious ovarian cancer cell lines?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 233</p> <p>1 time you're exposed to the insult. It's like</p> <p>2 radiation, it is a accumulative, it is registered in</p> <p>3 your body; that's my opinion.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. So your opinion is that one particle of talc is enough</p> <p>6 to cause inflammation to lead to ovarian cancer?</p> <p>7 A. I did not say that.</p> <p>8 Q. Well, how much talc must there be introduced in vivo to</p> <p>9 cause ovarian cancer?</p> <p>10 A. I don't know.</p> <p>11 Q. At what -- strike that. What data shows that a woman</p> <p>12 using talc will have the same level of talc exposure to</p> <p>13 her ovarian cells or fallopian tube cells as you used</p> <p>14 in your experiments?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: So when you want to test the</p> <p>17 effect of any substance in the biology of the body, you</p> <p>18 always start with cell cultures, cell lines, so this is</p> <p>19 pretty accepted standard. Now, the amount of exposure</p> <p>20 in cell lines, because it's direct and it is an</p> <p>21 isolated environment, it is definitely not -- does not</p> <p>22 correlate with the in vivo and how much you will get</p> <p>23 with that exposure. The answer is I don't know how</p> <p>24 much a woman need to be exposed and for how long to</p> <p>25 develop ovarian cancer in response to talcum powder</p>

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<p style="text-align: right;">Page 234</p> <p>1 use. But what I do know, talcum powder induces -- is a</p> <p>2 carcinogenic and induces similar response to the</p> <p>3 profile that we see in pro-oxidant state that we</p> <p>4 extensively characterize in studies in ovarian cancer</p> <p>5 in our laboratory and others.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. It induces -- talc induces a similar response to the</p> <p>8 profile that you see in pro-oxidant state in the cell</p> <p>9 cultures that you experimented, correct, experimented</p> <p>10 with, correct?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: We and others have reported,</p> <p>13 for example, there was a report showing that patients</p> <p>14 with ovarian cancer, their blood is contain high levels</p> <p>15 of pro-oxidants, so that's an indication that ovarian</p> <p>16 cancer -- as a result of getting ovarian cancer your</p> <p>17 blood is -- have high levels of oxidants that we</p> <p>18 characterized. And there are many other studies that</p> <p>19 have shown that -- in vivo that there is an association</p> <p>20 between oxidative stress and the risk of developing</p> <p>21 ovarian cancer.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. But none of those studies have shown those effects in</p> <p>24 women using talc, correct?</p> <p>25 A. I don't know.</p>	<p style="text-align: right;">Page 236</p> <p>1 A. The blood of woman with ovarian cancer.</p> <p>2 Q. No studies have reported those same results in the</p> <p>3 blood of women who do not have ovarian cancer but are</p> <p>4 using talc on their bodies, correct?</p> <p>5 A. One more time.</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. No studies have reported those same results in the</p> <p>9 blood of women who do not have ovarian cancer that are</p> <p>10 using talc on their bodies, correct?</p> <p>11 A. I don't know.</p> <p>12 Q. When you say you don't know, what do you mean?</p> <p>13 A. I don't know if there are studies. So you talking --</p> <p>14 are you referring to the study -- I'm only referring to</p> <p>15 patients with ovarian cancer, blood, their blood have</p> <p>16 high oxidants. Now, if normal, talk about normal</p> <p>17 people with normal woman with no ovarian cancer, they</p> <p>18 have -- I don't know, if they use talc they will have</p> <p>19 higher level of oxidants, maybe that's something we</p> <p>20 need to do.</p> <p>21 Q. You don't know -- you're not aware of any data showing</p> <p>22 high oxidant levels in women using talc who do not have</p> <p>23 ovarian cancer?</p> <p>24 A. I would be very much interested to do it.</p> <p>25 Q. You're not aware of any such studies?</p>
<p style="text-align: right;">Page 235</p> <p>1 Q. You don't know of any such studies?</p> <p>2 A. I don't know if those studies included in their</p> <p>3 population women that who have used talc or not.</p> <p>4 Q. You can't site for me any studies that have shown the</p> <p>5 levels of pro-oxidant or anti-oxidant states that you</p> <p>6 report in your papers in women using talc, correct?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: I just answered you.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. And the answer is no?</p> <p>11 A. No, no, I just -- my previous answer is the same.</p> <p>12 Q. Which is what?</p> <p>13 A. Which I said oxidative -- there have been shown that in</p> <p>14 the blood of a woman with ovarian cancer, there is an</p> <p>15 elevated levels of oxidants, and we're saying that if</p> <p>16 talcum powder induces oxidative stress, alter oxidative</p> <p>17 levels and redox balance by increasing oxidants and</p> <p>18 decreasing anti-oxidants, according to our data, that</p> <p>19 is an indication that it is doing -- manifesting the</p> <p>20 pathogenesis of ovarian cancer.</p> <p>21 Q. The studies you're referring to --</p> <p>22 MR. KLATT: Objection, nonresponsive.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. The studies you're referring to have been reported to</p> <p>25 have occurred in women with ovarian cancer, correct?</p>	<p style="text-align: right;">Page 237</p> <p>1 A. No.</p> <p>2 Q. Can you can cite for me anyone in the scientific</p> <p>3 community who has accepted that talcum powder causes</p> <p>4 ovarian cancer by the mechanism that you refer to in</p> <p>5 your report?</p> <p>6 A. Give names?</p> <p>7 Q. Yes.</p> <p>8 A. The co-authors of my manuscript.</p> <p>9 Q. Anyone else?</p> <p>10 A. I'm not aware, this is a very recent study.</p> <p>11 Q. Is it your testimony that the scientific community has</p> <p>12 accepted your opinion as establishing the causal</p> <p>13 mechanism between talc and ovarian cancer?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: My opinion is not out there</p> <p>16 yet, it's -- this is -- the manuscript is still under</p> <p>17 press, it's in press so it's not really out for the</p> <p>18 readers.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. You agree that the medical community has not generally</p> <p>21 accepted that talc use causes ovarian cancer?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: That they accept --</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Yes.</p>

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<p style="text-align: right;">Page 238</p> <p>1 A. Which community you talking about?</p> <p>2 Q. Well, I'm talking about the medical community.</p> <p>3 A. The doctors?</p> <p>4 Q. Doctors.</p> <p>5 A. Researchers?</p> <p>6 Q. Researchers.</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. You agree that the medical community, doctors and</p> <p>10 researchers, have not generally accepted that talc use</p> <p>11 causes ovarian cancer?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: I don't know, I really don't</p> <p>14 know if they do or not.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. You include in your report, in particular in the</p> <p>17 summary of your report over on Page 20, in Paragraphs 5</p> <p>18 and 6 that use of Johnson's Baby Powder can cause</p> <p>19 ovarian cancer, and in Paragraph 6 can worsen the</p> <p>20 prognosis of patients with ovarian cancer, correct?</p> <p>21 A. Correct.</p> <p>22 Q. By what methodology did you use to come to those</p> <p>23 opinions?</p> <p>24 A. Okay. So I have to distinguish between opinions versus</p> <p>25 conclusion from results. So here I cite my personal</p>	<p style="text-align: right;">Page 240</p> <p>1 ovarian cancer is in a hypothesis is a cause and</p> <p>2 effect. My opinion is based on that.</p> <p>3 Q. Are the methods that you used to reach those opinions</p> <p>4 published anywhere?</p> <p>5 A. The method that we used to do -- to test the effect of</p> <p>6 talcum powder on reactive oxygen species, oxidative</p> <p>7 stress, and inflammation is very basic methodology --</p> <p>8 let me finish, please -- basic methodology that is</p> <p>9 known since early 70s or even mid 70s, some of it,</p> <p>10 ELISA is a very well method, very standard method, we</p> <p>11 and others use this all the time. PCR is another well</p> <p>12 established method. Every single study now you see PCR</p> <p>13 all over the places. So what the methodology that we</p> <p>14 employed here is really standard methodology, and I'm</p> <p>15 really surprised that this work that has not been done</p> <p>16 till now.</p> <p>17 Q. Are your opinions based solely on the experiments that</p> <p>18 you did that are set out in your manuscript?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: My opinion is based on the data</p> <p>21 from this manuscript and this work that I did and,</p> <p>22 also, in published literature that identify the</p> <p>23 pattern, the signature of pro-oxidants in ovarian</p> <p>24 cancer.</p> <p>25</p>
<p style="text-align: right;">Page 239</p> <p>1 opinion. Now, my personal opinion is based on my data</p> <p>2 that I got here. The data that I tested, my</p> <p>3 methodology that I used, and the results of this study</p> <p>4 strongly divert -- pushed my opinion towards this.</p> <p>5 Q. My question is a little bit different, Doctor. By what</p> <p>6 published methodology did you use to reach your</p> <p>7 causation opinions in this case?</p> <p>8 MS. O'DELL: Objection, asked and answered.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. For example, are you familiar with the Bradford Hill</p> <p>11 factors or criteria?</p> <p>12 A. Okay, so are you referring to epidemiological studies?</p> <p>13 Q. No, let me back up. Have you ever heard of the</p> <p>14 Bradford Hill factors?</p> <p>15 A. No.</p> <p>16 Q. Is there -- can you cite for me any published</p> <p>17 methodology that you used to look at the data, look at</p> <p>18 your experiments, and come to the opinions that you set</p> <p>19 out in the summary of your report?</p> <p>20 A. Yes. I just said to you that based on my results and</p> <p>21 my previous finding, previous publications with other</p> <p>22 publications from other laboratories, that all agreed</p> <p>23 that a factor that causes inflammation and alter these</p> <p>24 signature factors, the signature for reactive oxygen</p> <p>25 species the way it does it for -- that simulates</p>	<p style="text-align: right;">Page 241</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. The opinions that you set out in Paragraphs 5 and 6</p> <p>3 have never been published in the peer-reviewed</p> <p>4 literature, correct?</p> <p>5 A. My opinion?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Yes. The opinions in Paragraphs 5 and 6 have never</p> <p>9 been published in the peer-reviewed literature,</p> <p>10 correct?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: I don't understand published</p> <p>13 means.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Well, published in peer-reviewed literature.</p> <p>16 A. As what, as a manuscript?</p> <p>17 Q. In any format. You have never set out the opinions in</p> <p>18 Paragraphs 5 and 6 in any public --</p> <p>19 A. So I read this somewhere else?</p> <p>20 Q. Somewhere else.</p> <p>21 A. I never read this somewhere else.</p> <p>22 Q. So you have never provided your opinions to any of your</p> <p>23 peers in any published article, correct?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: That's very general. What do</p>

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<p style="text-align: right;">Page 242</p> <p>1 you mean?</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Well, my question is the opinions you said in</p> <p>4 Paragraphs 5 and 6 have never been published anywhere,</p> <p>5 correct?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: No. What I'm saying is these</p> <p>8 are my own, my own opinion, my own writing, writing.</p> <p>9 If someone stole this and published it, I'm not aware</p> <p>10 of that, but this is my language, my words, my opinion,</p> <p>11 and this is based, as I told you and as I mentioned, on</p> <p>12 my data and the results of this study as well as what</p> <p>13 is known for the strong link of ovarian cancer and</p> <p>14 oxidative stress.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Listen to my question. You have never published the</p> <p>17 opinions of yours set out in Paragraphs 5 and 6 of your</p> <p>18 report, correct?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: I have published that ovarian</p> <p>21 cancer is characterized and ovarian cancer cells</p> <p>22 manifest a pro-oxidant state, I have published that --</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Nowhere have you --</p> <p>25 A. -- that can lead to a mechanism to identify --</p>	<p style="text-align: right;">Page 244</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. By you.</p> <p>3 A. My opinion?</p> <p>4 Q. Yes.</p> <p>5 A. Has never been -- I never said this before, this</p> <p>6 study --</p> <p>7 Q. Correct.</p> <p>8 A. -- is that what you're saying?</p> <p>9 Q. Before your report.</p> <p>10 A. About specifically talc and ovarian cancer?</p> <p>11 Q. Yes.</p> <p>12 A. Yes.</p> <p>13 Q. And you never said in any other writing that use of</p> <p>14 baby powder worsens the prognosis for patients with</p> <p>15 ovarian cancer?</p> <p>16 A. I didn't write about this subject prior to starting</p> <p>17 these experiments.</p> <p>18 Q. Even in your manuscript, you don't include the opinion</p> <p>19 that talcum powder use causes ovarian cancer, correct?</p> <p>20 A. You cannot include opinions in manuscripts.</p> <p>21 Q. That's not my question. My question is that your</p> <p>22 manuscript does not include your opinion that talcum</p> <p>23 powder use causes ovarian cancer, correct?</p> <p>24 A. I answered you.</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 243</p> <p>1 actually, we did identify a pathogenesis, a mechanism</p> <p>2 that involves these specific pro-oxidants to be unique</p> <p>3 mechanism of survival in ovarian cancer.</p> <p>4 Q. Nowhere have you published in any literature that talc</p> <p>5 use can cause ovarian cancer, correct?</p> <p>6 A. Previous to this study?</p> <p>7 Q. This study -- your report has not been published,</p> <p>8 correct?</p> <p>9 A. No.</p> <p>10 Q. It's not been peer reviewed, correct?</p> <p>11 A. No, my report? No.</p> <p>12 Q. What you say in your report that Johnson's Baby Powder</p> <p>13 exposure can cause ovarian cancer has never been</p> <p>14 published in the medical literature, correct?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: My report has not published</p> <p>17 yet.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. The opinions in your report that talcum powder exposure</p> <p>20 can cause ovarian cancer have never been published,</p> <p>21 correct?</p> <p>22 MS. O'DELL: Object to the form, by him or</p> <p>23 others?</p> <p>24 THE WITNESS: Okay. By me?</p> <p>25</p>	<p style="text-align: right;">Page 245</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Am I correct?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: Excuse me, one more time. I</p> <p>5 said in manuscripts you are not allowed to publish to</p> <p>6 draw opinions, in manuscripts you're allowed to draw</p> <p>7 conclusions, so conclusions are different than</p> <p>8 opinions. Conclusions are based solely on the results.</p> <p>9 Opinions, you can say it, if you say it, then if they</p> <p>10 accept it, it's fine, but opinions are based on not</p> <p>11 just the study but your opinion in it, too, based on</p> <p>12 your expertise.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Move to strike as nonresponsive. Doctor, listen to my</p> <p>15 question.</p> <p>16 A. I'm trying.</p> <p>17 Q. Your manuscript does not include your opinion that baby</p> <p>18 powder exposure can cause ovarian cancer, you don't say</p> <p>19 that in your manuscript, correct?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: I have to look in my</p> <p>22 manuscript.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Doctor, you can't tell me sitting here today --</p> <p>25 A. I'm sorry, I can't remember everything I wrote.</p>

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<p style="text-align: right;">Page 246</p> <p>1 Q. Listen to my question.</p> <p>2 A. Okay.</p> <p>3 Q. Does your manuscript say that Johnson's Baby Powder</p> <p>4 exposure can cause ovarian cancer?</p> <p>5 A. In this specific language?</p> <p>6 Q. Yes.</p> <p>7 A. I have to look.</p> <p>8 Q. Okay. How about do you have to look --</p> <p>9 A. Because you're asking me -- it's not fair, you're</p> <p>10 asking me for a specific language, and I am saying, I'm</p> <p>11 answering back saying that my opinion, it does. Based</p> <p>12 on the results in my manuscript, I concluded that it</p> <p>13 will -- it has increased risk of ovarian cancer, yes,</p> <p>14 somewhere. I have to read. That's what I'm saying. I</p> <p>15 don't remember where I did that.</p> <p>16 Q. Okay.</p> <p>17 A. I have to go and refer to the manuscript. Is that</p> <p>18 fair?</p> <p>19 Q. In Paragraph 6, what do you mean when you say Johnson's</p> <p>20 Baby Powder exposure worsens the prognosis for patients</p> <p>21 with ovarian cancer?</p> <p>22 A. Oh, we're still here? I'm sorry, where --</p> <p>23 Q. Paragraph 6 in your report.</p> <p>24 A. Oh, my report now?</p> <p>25 Q. On Page 21.</p>	<p style="text-align: right;">Page 248</p> <p>1 A. What I know is CA-125 is accepted, it's the only</p> <p>2 accepted marker because that's the only one available,</p> <p>3 although not specific to ovarian cancer, but we use it</p> <p>4 for preliminary following up treatment and diagnosis.</p> <p>5 You can, you know, I can defer to a clinician to answer</p> <p>6 more about that, but what I know is that it is not</p> <p>7 specific to ovarian cancer, endometriosis can increase</p> <p>8 levels of CA-125, some other inflammatory can do that.</p> <p>9 Q. Doctor, listen to my question. My question was that no</p> <p>10 studies have correlated CA-125 levels with ovarian</p> <p>11 cancer risk, correct?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: Again, I told you, I'm not an</p> <p>14 expert in CA-125 and its clinical utility. What I'm</p> <p>15 trying to tell you is that CA-125 is a marker that</p> <p>16 clinician, OB-GYN oncologist, use to help them diagnose</p> <p>17 and follow up the effect of -- the efficacy of</p> <p>18 treatment. Now, this molecule is a marker of</p> <p>19 inflammation, and we and our results shows clearly that</p> <p>20 talcum powder can induce this inflammatory marker that</p> <p>21 has been clinically used by clinicians to help them</p> <p>22 diagnose and, more importantly, follow up the efficacy</p> <p>23 of treatment.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Dr. Listen, to my question. I'll ask a different</p>
<p style="text-align: right;">Page 247</p> <p>1 A. 21?</p> <p>2 Q. Yes.</p> <p>3 A. Okay, yes, so same, same discussion.</p> <p>4 Q. Listen to my question. My question is what do you mean</p> <p>5 that Johnson's Baby Powder exposure worsens the</p> <p>6 prognosis for patients with ovarian cancer?</p> <p>7 A. Can I answer?</p> <p>8 Q. Yes.</p> <p>9 A. Okay. So based on our results here, we have shown that</p> <p>10 there is a dose response effect of talcum powder on</p> <p>11 these key markers of oxidative stress. That's my</p> <p>12 answer.</p> <p>13 Q. And how do those key -- strike that.</p> <p>14 A. Dose response.</p> <p>15 Q. What is the measure that you apply for worsening the</p> <p>16 prognosis of ovarian cancer?</p> <p>17 A. Is increasing redox balance -- reactive oxygen species,</p> <p>18 tilting the balance, adding more inflammatory markers</p> <p>19 with time with exposure.</p> <p>20 Q. You make reference in your paper to CA-125, when I say</p> <p>21 your paper I'm talking about your report and in your</p> <p>22 manuscript, correct?</p> <p>23 A. Correct.</p> <p>24 Q. No studies have correlated CA-125 levels with ovarian</p> <p>25 cancer risk, correct?</p>	<p style="text-align: right;">Page 249</p> <p>1 question. CA-125 is used only in monitoring disease</p> <p>2 progress in women who have ovarian cancer, correct?</p> <p>3 A. I don't know if that's the only use of it.</p> <p>4 Q. It's not used to diagnose ovarian cancer, correct?</p> <p>5 A. I don't know. I'm not a clinician. I really don't</p> <p>6 know.</p> <p>7 Q. It's not used to determine the cause of ovarian cancer,</p> <p>8 is it?</p> <p>9 A. I don't know, you can ask. I defer these questions to</p> <p>10 a physician, OB-GYN oncologist who can answer you. I</p> <p>11 am a biological chemist, I'm molecular biologist. I</p> <p>12 will answer you within my expertise.</p> <p>13 Q. CA-125 is not used to determine whether women have an</p> <p>14 inflammatory process going on in their bodies, correct?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: If the levels of CA-125 is</p> <p>17 increased in a woman, my understanding, this is a</p> <p>18 strong indication to an inflammatory process going on,</p> <p>19 yes.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. You're talking about in women who have ovarian cancer?</p> <p>22 A. It is also increased in women with, yes, with ovarian</p> <p>23 cancer.</p> <p>24 Q. CA-125 is not used to diagnose whether inflammation is</p> <p>25 going on in women who do not have ovarian cancer?</p>

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<p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: Ask the OB-GYN oncologist.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. If you look at your manuscript over at Table 2.</p> <p>5 A. Okay.</p> <p>6 Q. What is the mechanism by which talc causes the SNP</p> <p>7 changes or switches you report in this table?</p> <p>8 A. Do I know the mechanism that does that?</p> <p>9 Q. Yes.</p> <p>10 A. Precisely, no, but we have previously published a</p> <p>11 report showing that development of chemoresistance,</p> <p>12 which is an ovarian cancer -- ovarian cancer disease</p> <p>13 that is characterized by even further enhancement of</p> <p>14 oxidative stress, we have published that is associated</p> <p>15 with these SNPs. So the precise mechanism I'm</p> <p>16 proposing that according to my understanding is that</p> <p>17 the higher the oxidative stress level, the more chances</p> <p>18 that you induce these switches, these mutations.</p> <p>19 Q. Can you cite for me any published data showing these</p> <p>20 same or similar type of switches in cells that have</p> <p>21 been exposed to any other substance, whether it's a</p> <p>22 carcinogen or otherwise?</p> <p>23 A. If there is any other substance that induces mutations?</p> <p>24 Q. That induces the kinds of mutations that you report</p> <p>25 here.</p>	<p>1 results in further inhibition of apoptosis and increase</p> <p>2 of survival -- apoptosis, cell death, cell death.</p> <p>3 Q. Doctor, listen to my question. Can you cite for me any</p> <p>4 other substances that have ever been reported to cause</p> <p>5 these kinds of mutations after 72 hours of treatment in</p> <p>6 cell cultures?</p> <p>7 A. I cannot recall now.</p> <p>8 Q. The cell cultures you used are at high oxygen levels,</p> <p>9 are at high oxygen levels than in vivo, correct?</p> <p>10 A. I don't understand the question.</p> <p>11 Q. Well, the cell cultures that you use for purpose of</p> <p>12 your experiments are at higher oxygen levels than these</p> <p>13 cells would experience in vivo, correct?</p> <p>14 A. You mean the whole world of researcher used?</p> <p>15 Q. No, that the cell lines that you used --</p> <p>16 A. The whole world of researcher used, same 20 percent</p> <p>17 oxygen in CO2, okay, it's the same exact standard</p> <p>18 protocol all over the research field. I never heard</p> <p>19 that there's anyone culturing cancer cells in a</p> <p>20 different environment than -- we have done many work</p> <p>21 looking at the effect of hypoxia and hyperoxia on the</p> <p>22 expression of these markers in normal cells. We have</p> <p>23 done several, I have published several publications.</p> <p>24 Let me help you with this information.</p> <p>25 Q. Let me withdraw the question, Doctor. You're going on</p>
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<p>1 A. In the literature, there are several, many substance</p> <p>2 that have been associated with certain mutations in the</p> <p>3 DNA, yes.</p> <p>4 Q. Well, let me ask it a different way. Can you cite for</p> <p>5 me any substance that has been shown to cause -- or</p> <p>6 strike that, let me back up. Is it your testimony that</p> <p>7 what you're reporting here -- that you're reporting</p> <p>8 here that talc causes mutations in DNA in 72 hours?</p> <p>9 MS. O'DELL: Object to form.</p> <p>10 THE WITNESS: My results indicates that if</p> <p>11 you treat cells with talcum powder for 72 hours and</p> <p>12 look for whatever showed positive here, some showed</p> <p>13 negative, that there is an induction of this specific</p> <p>14 mutation in response to the treatment of talc.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Can you cite for me any other substance that's ever</p> <p>17 been reported to cause these kinds of mutations after</p> <p>18 72 hours of treatment in cell cultures?</p> <p>19 A. I cannot recall now. I'm sure I can find them. There</p> <p>20 are many in the literature, by the way, but I am citing</p> <p>21 you specifically my work that I have done in my</p> <p>22 laboratory that was shown that when oxidative stresses</p> <p>23 further -- increased and enhanced, we develop some of</p> <p>24 these mutations, cell would acquire these mutations in</p> <p>25 certain key pro-oxidants and anti-oxidant enzymes that</p>	<p>1 not answering my question.</p> <p>2 A. I'm trying.</p> <p>3 Q. No, you're not answering my question.</p> <p>4 A. I'm answering what I understood.</p> <p>5 Q. The tests you conducted, the experiments you conducted</p> <p>6 are higher oxygen levels than cells are exposed to in</p> <p>7 vivo, correct?</p> <p>8 A. I'm trying to -- no, it's not, I'm trying to explain it</p> <p>9 to you.</p> <p>10 Q. They're not higher levels?</p> <p>11 A. What do you mean by in vivo? In blood?</p> <p>12 Q. Cells inside the body.</p> <p>13 A. It's PO20, it's the same.</p> <p>14 Q. So the oxygen levels of the cells in the body are at</p> <p>15 the same level as the oxygen levels of the cells in</p> <p>16 your cell --</p> <p>17 MS. O'DELL: Objection.</p> <p>18 THE WITNESS: No, I said the oxygen levels in</p> <p>19 the circulation in vivo is the same as the oxygen level</p> <p>20 in the media where we culture cells. This is where we</p> <p>21 get it from, not from a dream, we got it from there.</p> <p>22 Now, if you're referring to the oxygen levels that</p> <p>23 cells are exposed to in tissues --</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Yes.</p>

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<p style="text-align: right;">Page 254</p> <p>1 A. Nobody knows that. There's only one single report that 2 says in a physiology book where I was a student at that 3 time, they're saying 6 percent, 5 to 6 percent. But 4 that is inside the tissues without the circulation. 5 Now, you have to remember all cells get food from 6 circulation, so you will have eventually enough oxygen 7 that you're getting for. So this is within my 8 expertise, I've done many, many work on this. 9 Q. The glucose levels in your cell cultures are also 10 higher than what the cells would experience in the 11 body, correct? 12 A. The glucose level that we use in the media, again, is 13 standard with all of any researcher on the face of this 14 earth use. It is standard accepted levels. So if you 15 are trying to make that what we use is different than 16 in vivo, it could be, but this is what agreed upon in 17 the research community. 18 Q. Move to strike as nonresponsive. Listen to my 19 question, Doctor. Are the glucose levels in cell 20 cultures that you performed for purposes of your 21 experiments higher than the glucose levels of the cells 22 inside the body? 23 MS. O'DELL: Objection, form, asked and 24 answered. 25 THE WITNESS: I don't know.</p>	<p style="text-align: right;">Page 256</p> <p>1 that -- why do your control cell lines have such high 2 levels of Caspase? 3 A. So it is known, as we have previously published and all 4 other researcher who was interested in this, that 5 cancer cells have almost shut down their apoptosis, 6 because they have to increase their survival. So when 7 you compare apoptosis of any cancer cell from any type, 8 okay, you will find their apoptosis is way, way lower 9 than normal cells. Normal cells, they have -- they 10 divide, they die, they reproduce, all the times. 11 Cancer cells don't like to die, they love to survive, 12 so their apoptotic pathways are not normal. 13 Q. So then what you're reporting here are as to control 14 cells, controls in ovarian cancer cells? 15 A. No, no. The controls here are macrophages, it's normal 16 ovarian epithelial, and fallopian tube epithelial. 17 Q. Why are your -- the Caspase levels higher in your 18 controls than in your talc treated cells? 19 A. Maybe I missed the question. I just answered that, 20 right? 21 Q. Well, I don't think you answered my question. 22 A. Well, let me try to understand what you want. 23 Q. Well, the Figure 6 shows that the controls have higher 24 levels of Caspase-3 than the talc treated cells, 25 correct?</p>
<p style="text-align: right;">Page 255</p> <p>1 BY MR. HEGARTY: 2 Q. Aren't the cells that you experiment with in a 3 hyperglycemic state? 4 A. I just told I don't know. 5 Q. Can high glucose levels cause an increase in reactive 6 oxygen species? 7 A. Okay, so -- 8 Q. Can they or can't they? 9 MS. O'DELL: He gets to -- you asked the 10 question, he -- 11 THE WITNESS: There is no yes or no answer. 12 BY MR. HEGARTY: 13 Q. Okay. I withdraw the question. 14 A. If you are trying to take me to say "yes" or "no" to 15 something that I have explanation for, I think you 16 should just listen to my explanation. I am actually -- 17 this field, this field is my field, and I will tell 18 you, okay, I'll tell you that the cancer cells are -- 19 their metabolism is different than normal cells because 20 their uptake, their uptake of glucose, they don't go in 21 aerobic metabolism, they go anaerobic metabolism, so it 22 doesn't matter how much glucose you give them, it 23 doesn't really. 24 Q. If you look over on Page -- Figure 6 of your 25 manuscript, why do your normal cell lines -- strike</p>	<p style="text-align: right;">Page 257</p> <p>1 MS. O'DELL: Object to the form. Do you need 2 to see that in color, Doctor? Would that help? 3 THE WITNESS: Yes, please. 4 MS. O'DELL: (Handing.) 5 THE WITNESS: So here, the control cells, so 6 let's look at the normal cells -- okay, the normal 7 cells -- well, that's the whole idea, the whole 8 objective of this research, the whole point, that if 9 you treat with talcum powder, talcum powder induces -- 10 enhances oxidative stress that stimulate apoptosis 11 pathways and shut them down, inhibit them. So in the 12 treated -- in the treated, they should be lower than 13 the untreated. 14 BY MR. HEGARTY: 15 Q. What are the normal Caspase levels in a normal cell? 16 A. It's different for different cell types, but normal 17 cell types, normal cells always have way higher 18 apoptosis than cancer cells. This is well known 19 phenomenon. 20 Q. At the levels you report in Figure 6? 21 A. It depends on the cells, again, I said, it depends on 22 the cell type. So maybe other people in their work, 23 they have different response. But it is accepted that 24 is cancer cells, all cancer cells, no exception, have 25 lower, way lower apoptosis than normal cells. I</p>

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<p style="text-align: right;">Page 258</p> <p>1 published previously that lower apoptosis in cancer</p> <p>2 cells is due to overexpression of nitric oxide</p> <p>3 synthase, which is a pro-oxidant, and myeloperoxidase,</p> <p>4 which is another pro-oxidant, and they work together to</p> <p>5 nitroisolate Caspase-3, that's what we're measuring</p> <p>6 here, and shutting down its activity and its apoptosis.</p> <p>7 Q. The type of SNP changes that you report in your</p> <p>8 manuscript can be detected by Sanger sequencing,</p> <p>9 correct?</p> <p>10 A. Now, that's -- we're moving from this?</p> <p>11 Q. Yes.</p> <p>12 A. Okay, sorry, I thought we were still here.</p> <p>13 Q. Different question.</p> <p>14 A. Okay. Give me a --</p> <p>15 Q. Can you answer my question?</p> <p>16 A. What's the question?</p> <p>17 Q. The type of SNP changes that you report in your</p> <p>18 manuscript can be detected by Sanger sequencing,</p> <p>19 correct?</p> <p>20 A. Yes.</p> <p>21 Q. Did you use this method?</p> <p>22 A. No.</p> <p>23 Q. Have you ever used Sanger sequencing to detect changes</p> <p>24 in SNPs or to analyze SNPs?</p> <p>25 A. You mean gene mutations?</p>	<p style="text-align: right;">Page 260</p> <p>1 A. I believe we have published a different study with the</p> <p>2 same subject. You want me to look for it?</p> <p>3 Q. Not right now.</p> <p>4 A. Okay, but we did publish that before.</p> <p>5 Q. Did you measure changes in peroxide levels as part of</p> <p>6 your experiment?</p> <p>7 A. Excuse me, one more time.</p> <p>8 Q. Did you measure changes in peroxide levels as part of</p> <p>9 your experiments?</p> <p>10 A. What is peroxide level?</p> <p>11 Q. Hydrogen peroxide level.</p> <p>12 A. Oh, H2O2?</p> <p>13 Q. Yes.</p> <p>14 A. Indirectly, yes.</p> <p>15 Q. When you sat indirectly, what do you mean?</p> <p>16 A. Because it's the substrate for an enzyme, so it's an</p> <p>17 enzymatic reaction.</p> <p>18 Q. Did you find any changes in hydrogen peroxide levels in</p> <p>19 the talc treated cells?</p> <p>20 A. We didn't measure the actual H2O2 levels in these</p> <p>21 cells. We did measure the catalase activity that turns</p> <p>22 H2O2 to H2O, which is the turnover.</p> <p>23 Q. Have you ever measured hydrogen peroxide levels in</p> <p>24 these types of studies?</p> <p>25 A. Have I measured -- H2O2, I don't think so, directly,</p>
<p style="text-align: right;">Page 259</p> <p>1 Q. Gene mutations, yes.</p> <p>2 A. So the answer is nowadays no one does this from the</p> <p>3 research community. There are core facilities, labs</p> <p>4 that you send to. You don't need -- I don't believe</p> <p>5 people will in their laboratories that sit down and do</p> <p>6 experiments that takes forever. They just rather send</p> <p>7 it to this lab, we have -- every university have this,</p> <p>8 we have a core facility that you can send to, and then</p> <p>9 they will do it for you and they will give you the</p> <p>10 results, so you don't need to do it yourself.</p> <p>11 Q. Is Sanger sequencing considered more accurate than</p> <p>12 TaqMan?</p> <p>13 A. Pretty much I think they are the same level.</p> <p>14 Q. And you said you have used Sanger sequencing before?</p> <p>15 A. No, personally no.</p> <p>16 Q. What is the mechanism by which the SNP change, as you</p> <p>17 say, talc induces cause the redox changes that you</p> <p>18 report in your study?</p> <p>19 A. So talcum powder treatment increase, induces the</p> <p>20 specific mutations that are associated with altering</p> <p>21 the activity of the redox, the key oxidant enzymes that</p> <p>22 the results will be altering the oxidated balance.</p> <p>23 Q. And what studies show that?</p> <p>24 A. This study.</p> <p>25 Q. What studies besides your study, your manuscript?</p>	<p style="text-align: right;">Page 261</p> <p>1 directly H2O2 levels, no.</p> <p>2 Q. You've referred earlier to the fact that you have</p> <p>3 published abstracts that have talked about the results</p> <p>4 of the experiments we've marked as -- let me start</p> <p>5 again. You mentioned earlier that you published the</p> <p>6 results of the experiments documented in lab notebooks</p> <p>7 marked as Exhibits 2 and 3 in the past, correct?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. You didn't get that question?</p> <p>11 A. No.</p> <p>12 Q. You mentioned you had published the results of your</p> <p>13 experiments that we've been talking about here today in</p> <p>14 abstracts, correct?</p> <p>15 A. There was an SRI abstract that I presented at the SRI</p> <p>16 meeting March of '18, last year, that was reflected or</p> <p>17 involved this initial work that we did with Fisher with</p> <p>18 PCR.</p> <p>19 Q. And you also presented at an SGO meeting, correct?</p> <p>20 A. I believe I did.</p> <p>21 Q. In either case did you disclose that you were a</p> <p>22 consultant for plaintiffs counsel in litigation,</p> <p>23 correct?</p> <p>24 A. When you submit the abstract, they will not let you</p> <p>25 proceed until you -- yes, the answer is yes.</p>

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<p style="text-align: right;">Page 262</p> <p>1 Q. The answer is that you did disclose?</p> <p>2 A. I did disclose, yes.</p> <p>3 Q. It's not included -- the disclosure's not included in</p> <p>4 the abstracts, correct.</p> <p>5 A. They don't have it like that, no.</p> <p>6 Q. When you presented the abstracts, did this involve</p> <p>7 standing there in front of a poster?</p> <p>8 A. Yes.</p> <p>9 Q. And did people come up and talk to you about your</p> <p>10 posters?</p> <p>11 A. Yes.</p> <p>12 Q. Did you identify yourself as an expert in litigation</p> <p>13 involving talc and ovarian cancer?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: No one asked me.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Did you tell them that you were?</p> <p>18 A. I didn't volunteer anything.</p> <p>19 Q. Have you provided your opinions in this case to anyone</p> <p>20 outside of plaintiff's counsel or your colleagues on</p> <p>21 the manuscript?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: So you just asked me if I</p> <p>24 discussed this with people that I presented to in the</p> <p>25 whole meeting.</p>	<p style="text-align: right;">Page 264</p> <p>1 specific.</p> <p>2 Q. Are your opinions in this case premised on talc</p> <p>3 containing asbestos?</p> <p>4 A. (Witness shakes head from side to side.) I don't know,</p> <p>5 no, my opinion has nothing to do with that.</p> <p>6 Q. Are your opinions in any way based on talc having heavy</p> <p>7 metals in them?</p> <p>8 A. No.</p> <p>9 Q. Is it your opinion that talc without asbestos or</p> <p>10 without any other constituents can cause ovarian</p> <p>11 cancer?</p> <p>12 A. The one that I got in this bottle from J & J, yes.</p> <p>13 Q. Is it your opinion, Doctor, that your studies or your</p> <p>14 experiments show that talc increases cellular</p> <p>15 proliferation and decreases apoptosis?</p> <p>16 A. I'm sorry, one more time, one more time.</p> <p>17 Q. Sure. Is it your opinions or is it your opinion that</p> <p>18 talc use increases cellular proliferation and decreases</p> <p>19 apoptosis in normal ovarian cells?</p> <p>20 A. My finding clearly indicates that if you treat cells</p> <p>21 with talcum powder, the results of this treatment is a</p> <p>22 dose response increase in proliferation and decrease in</p> <p>23 apoptosis, yes.</p> <p>24 Q. In normal ovarian cells?</p> <p>25 A. In normal and in cancer cells.</p>
<p style="text-align: right;">Page 263</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Well, let me ask it a different way because I can see</p> <p>3 where you're confused. We talked about your opinions</p> <p>4 that talc can cause ovarian cancer.</p> <p>5 A. Oh, so we're going back here now?</p> <p>6 Q. Yes, we're going back to your opinions.</p> <p>7 A. Okay.</p> <p>8 Q. Have you ever told anyone at the medical school, at</p> <p>9 Wayne State Medical School that talc use can cause</p> <p>10 ovarian cancer?</p> <p>11 A. I don't recall.</p> <p>12 Q. Have you ever told anyone at Wayne State School of</p> <p>13 Medicine that talc use can worsen the prognosis of</p> <p>14 ovarian cancer?</p> <p>15 A. Again, I don't recall. I don't remember.</p> <p>16 Q. Can you tell for me, when you say you can't recall</p> <p>17 having had a discussion with anyone --</p> <p>18 A. I can't remember that I said that.</p> <p>19 Q. Can you cite for me anyone that you've spoken with at</p> <p>20 the Wayne State School of Medicine where you've told</p> <p>21 them your opinions that talc use can cause ovarian</p> <p>22 cancer or can worsen ovarian cancer?</p> <p>23 A. Other than the co-authors of this study?</p> <p>24 Q. Yes.</p> <p>25 A. I haven't talked to anyone, in my school, to be</p>	<p style="text-align: right;">Page 265</p> <p>1 Q. Cell proliferation does not mean cancer, correct?</p> <p>2 A. Cell -- increase in cell proliferation beyond normal is</p> <p>3 a highlight of cancer cells.</p> <p>4 Q. There is cell proliferation in normal cells in the</p> <p>5 absence of cancer, correct?</p> <p>6 A. So good question. So cell -- normal cells in response</p> <p>7 to agents can be temporally transit induces their</p> <p>8 proliferation, but they come back. Cancer cells don't</p> <p>9 come back. They will proliferate forever.</p> <p>10 Q. But you agree that cell proliferation does not equate</p> <p>11 to cancer?</p> <p>12 A. Okay, I am answering you. According to my knowledge,</p> <p>13 transit, transit or let's say temporary or initial</p> <p>14 induction of proliferation, it is a normal response of</p> <p>15 all normal cells to agents. If this response</p> <p>16 continues, now, this is a hallmark of cancer. It is</p> <p>17 indication that this cell is going that route.</p> <p>18 Q. In the tests you conducted, the results would be</p> <p>19 considered an acute response to talc, correct?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: Yes, I understand. In cell</p> <p>22 culture you cannot distinguish between acute response</p> <p>23 versus chronic response. In cell culture you cannot do</p> <p>24 that. So in cell culture it is a response.</p> <p>25 Q. That you cannot say would occur in a chronic way?</p>

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<p>1 MS. O'DELL: Objection.</p> <p>2 THE WITNESS: I don't know if this -- okay,</p> <p>3 here's the question, so the answer is you expose cells,</p> <p>4 talcum powder, cells go crazy and they increase their</p> <p>5 proliferation. If they don't come back, so that's the</p> <p>6 response to the acute, if they don't come back and</p> <p>7 there is talcum powder particles in there, and they</p> <p>8 keep provoking the inflammation, that transit goes into</p> <p>9 chronic inflammation. I'm trying to think of</p> <p>10 simulation to in vivo, but in cell culture you cannot</p> <p>11 tell.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Can you cite for me any studies showing increase in</p> <p>14 cell proliferation in the presence of talc in vivo?</p> <p>15 MS. O'DELL: Objection, form.</p> <p>16 THE WITNESS: Very complicated question,</p> <p>17 break it down for me, please.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. I don't know if I can break it down. Can you cite for</p> <p>20 me any study showing an increase in cell proliferation</p> <p>21 in the presence of talc in women using talc?</p> <p>22 A. How would you measure --</p> <p>23 MS. O'DELL: Objection.</p> <p>24 THE WITNESS: How would you measure cell</p> <p>25 proliferation in woman?</p>	<p>1 contaminant decrease in apoptosis is a hallmark of</p> <p>2 ovarian cancer.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Not my question, Doctor. My question was are there any</p> <p>5 studies showing that an increase in cell proliferation,</p> <p>6 as you showed in your experiments, is associated with</p> <p>7 an increase in ovarian cancer risk?</p> <p>8 MS. O'DELL: Object to the form, asked and</p> <p>9 answered.</p> <p>10 THE WITNESS: Okay, so you're asking if there</p> <p>11 are reports showing that there is the increased</p> <p>12 proliferation is associated with increased cancer risk?</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Correct.</p> <p>15 A. Okay, again, I'm answering, the answer is I don't know</p> <p>16 because I believe that you cannot measure proliferation</p> <p>17 in vivo.</p> <p>18 Q. Are there any studies showing that a decrease in</p> <p>19 apoptosis, as you showed in your experiments, is</p> <p>20 associated with an increase in ovarian cancer risk?</p> <p>21 A. So I would respond the same way. I would say, again,</p> <p>22 these -- to determine apoptosis, you have to isolate</p> <p>23 the cells from the patient outside and do cell culture</p> <p>24 and look into that, so I'm not aware.</p> <p>25 Q. Are there any studies showing either an increase in</p>
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<p>1 BY MR. HEGARTY:</p> <p>2 Q. Well, I'm asking you if you're aware of any such</p> <p>3 studies?</p> <p>4 A. I'm answering. I said how would you measure that? I'm</p> <p>5 not aware, I don't know.</p> <p>6 Q. Are you aware of any studies showing a decrease in</p> <p>7 apoptosis in the cells of women using talc?</p> <p>8 A. Again, these studies only done in cell culture. You</p> <p>9 cannot do this in vivo. This has to be isolated from</p> <p>10 the woman of ovarian cancer who use talc, who didn't</p> <p>11 use talc, and then you look at their cells in culture</p> <p>12 to determine those parameters. You cannot determine</p> <p>13 those in vivo. Although there are pathology they can</p> <p>14 do, they can do proliferation markers like KI67, it's</p> <p>15 been done, it's all over, there are indications, but</p> <p>16 they cannot do this in vivo. This has been done in</p> <p>17 tissues. With woman, yes, you can do it, but to do</p> <p>18 that you have to isolate the cells and then look at the</p> <p>19 cell response.</p> <p>20 Q. Are there any studies showing that an increase in cell</p> <p>21 proliferation, as you showed in your experiments, is</p> <p>22 associated with an increase in ovarian cancer risk?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: There are several studies that</p> <p>25 shows that enhanced proliferation and reduce with</p>	<p>1 cell proliferation or a decrease in apoptosis as you</p> <p>2 have shown in your report in women using talc?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I'm not aware of that.</p> <p>5 MR. HEGARTY: Why don't we take a break, go</p> <p>6 off the record. I need to converse with counsel for</p> <p>7 Imerys about how much time that he needs for his</p> <p>8 questioning.</p> <p>9 MS. O'DELL: Okay.</p> <p>10 THE VIDEOGRAPHER: Going off the record at</p> <p>11 5:04 p.m.</p> <p>12 (A short recess was taken.)</p> <p>13 THE VIDEOGRAPHER: We're back on the record at</p> <p>14 5:26 p.m.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Doctor, in your cell experiments, how did you control</p> <p>17 for cross-contamination?</p> <p>18 MS. O'DELL: I'm sorry, I didn't hear, for</p> <p>19 cross-contamination?</p> <p>20 MR. HEGARTY: Yes.</p> <p>21 THE WITNESS: Cross-contamination, so cross-</p> <p>22 contamination from each -- from the cells that I used?</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. How did you control to keep from mixing up of samples?</p> <p>25 MS. O'DELL: Object to the form.</p>

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<p style="text-align: right;">Page 270</p> <p>1 THE WITNESS: I'm not sure that I understood 2 your question. Are you referring to mixing the two 3 cell lines, for example? 4 BY MR. HEGARTY: 5 Q. Yes. 6 A. With each other? 7 Q. Correct. 8 A. That's not possible. 9 Q. Why is that not possible? 10 A. Because each cell line is done in one experiment 11 treatment with all the doses on its own. 12 Q. What about mixing normal cells with the -- I'm sorry, 13 how about mixing control cells with the treated cells, 14 is that possible? 15 A. What do you mean by control cells, not treated? 16 Q. Not treated? 17 A. So, also, that's not possible because you -- we divide, 18 we grow the cells, one lot, one lot of cells, and then 19 we aliquot, we put 1 million cells here, 1 ml cells 20 here, and then we separate them and give the different 21 doses for each cell lines. And the -- this thing, the 22 treatment was repeated for PCR for RNA, for protein for 23 ELISA, for proliferation assays, so it's not possible 24 that there is a mix between treated and untreated. 25 Q. Do you know what positive and negative controls are in</p>	<p style="text-align: right;">Page 272</p> <p>1 There's two different controls, okay. We did negative 2 and positive for the treatment, so this is with talc, 3 this is with no talc. For the markers, for the 4 markers, we have standards that with serial dilution 5 tells you exactly how much you expect to get in there. 6 Q. Did you use a negative control in your cell studies 7 with a known inert substance? 8 MS. O'DELL: Object to the form. 9 THE WITNESS: That's not a negative control 10 to me, it does not apply to my study. The only 11 negative control that applies to my study is talc with 12 no talc. 13 BY MR. HEGARTY: 14 Q. How can you rule out in your studies that any 15 particulate you added to the cell cultures would cause 16 the same thing? 17 A. Again, we tested several fold. So our study does not 18 qualify for a positive positive control that you're 19 referring to or a negative negative control. 20 Q. How are you able to rule out that glass beads wouldn't 21 cause the same -- 22 A. Glass beads? 23 Q. -- effect? How are you able to rule out that some 24 inert part, other part -- strike that. How would you 25 rule out that any particle wouldn't cause the same</p>
<p style="text-align: right;">Page 271</p> <p>1 cell studies? 2 A. I do. 3 Q. You did not use positive and negative controls in your 4 cell studies, correct? 5 A. Not correct. 6 Q. Well, I'm going to define positive controls as applying 7 a known cancer causing substance to the cells. Is that 8 your understanding of positive control? 9 A. Not in these studies. 10 Q. I'm talking about generally. 11 A. Generally a positive control that something that you 12 know it's there and you're looking for it. 13 Q. What is in general terms a negative control? 14 A. A negative control, something you're not looking for, 15 it is not there. 16 Q. Well -- 17 A. So there is negative negative and there is positive 18 positive. 19 Q. Did you do any of your tests -- I'm sorry, did you do 20 any of your experiments using any substances known to 21 be a carcinogen? 22 A. One more time. I will answer you. The answer is no, 23 okay, but you're referring to -- so there are two 24 different controls, negative and positive for the 25 target, and negative and positive for the treatment.</p>	<p style="text-align: right;">Page 273</p> <p>1 effect that you saw in your studies? 2 A. Very simple, the untreated didn't show that. 3 Q. Well, how do you rule out that the treated cells would 4 react the same way regardless of what you put on them? 5 In other words, if you put -- how did you rule out that 6 any particle would not cause the same thing if you 7 mixed it with DMSO and applied it to talc? 8 A. Yeah, so we did DMSO control. 9 MS. O'DELL: Object to the form. 10 THE WITNESS: So we did -- took the talc, 11 mixed it with DMSO, took the DMSO, treat the cells with 12 DMSO alone and with DMSO and talc. So if the effect 13 was due to DMSO, you would see the response in the 14 untreated cells. 15 BY MR. HEGARTY: 16 Q. Would cornstarch cause the same result? 17 A. I did not test it. 18 Q. How can you rule out that cornstarch wouldn't do the 19 same thing if applied to cells? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: I didn't rule anything, I did 22 not test it. 23 BY MR. HEGARTY: 24 Q. Does cornstarch cause cancer? 25 A. I did not test it.</p>

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<p style="text-align: right;">Page 274</p> <p>1 Q. Well, in your opinion, does --</p> <p>2 A. In my opinion?</p> <p>3 Q. Yes.</p> <p>4 A. From my information? I don't think so.</p> <p>5 Q. Could you have tested cornstarch in the same way you</p> <p>6 tested talc?</p> <p>7 A. Could I have?</p> <p>8 Q. Yes.</p> <p>9 A. I can use my methodology to test that, yes, of course.</p> <p>10 Q. And are you able to say that no other particle exposed</p> <p>11 in the same way that you would expose cells with talc</p> <p>12 would not have caused the same result?</p> <p>13 MS. O'DELL: Object to the form.</p> <p>14 THE WITNESS: I already answered.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. What's your answer?</p> <p>17 A. Okay, I'm saying that in this study, the way this</p> <p>18 study's designed to look at the effect with talc,</p> <p>19 without talc, if you are looking at one marker only,</p> <p>20 then maybe we should consider more, but we're looking</p> <p>21 at several markers at several levels. So we're looking</p> <p>22 at mRNA DNA mRNA protein activity, several levels here.</p> <p>23 Q. But you cannot say that cornstarch wouldn't do the same</p> <p>24 thing as talc did in your experiments?</p> <p>25 A. I did not study cornstarch, so I cannot tell you.</p>	<p style="text-align: right;">Page 276</p> <p>1 A. I didn't say I did not agree. I said I am not -- I</p> <p>2 don't have any molecular data in my laboratory to</p> <p>3 support the direct effect of talcum powder on my</p> <p>4 markers that I studied in my lab, and I would like to</p> <p>5 do that.</p> <p>6 Q. When in relation to the first call that you had with</p> <p>7 Miss Thompson did you agree to serve as a consultant</p> <p>8 for Beasley Allen?</p> <p>9 A. I think it was like October sometime.</p> <p>10 Q. And in between the time of the first call and October,</p> <p>11 did you have any additional calls with anyone from --</p> <p>12 A. We had the meeting September 7, if I remember.</p> <p>13 Q. At the time of that meeting, had you agreed to serve as</p> <p>14 a consultant for Beasley Allen?</p> <p>15 A. I agreed in principle to serve as a consultant for what</p> <p>16 I am an expert in, which is oxidative stress and</p> <p>17 ovarian cancer, and I promised to run data, do some</p> <p>18 work, because I wanted to find out if there is</p> <p>19 molecular evidence to support the effect of talcum</p> <p>20 powder on the markers that I study, which are the</p> <p>21 markers of risk of ovarian cancer.</p> <p>22 Q. And you agreed to serve as a consultant, at least as to</p> <p>23 oxidative stress and ovarian cancer, as of the time of</p> <p>24 the meeting in September?</p> <p>25 MS. O'DELL: Object as to form.</p>
<p style="text-align: right;">Page 275</p> <p>1 Q. We talked earlier at the beginning of the deposition</p> <p>2 about you receiving a call from Miss Thompson, correct?</p> <p>3 A. Yes.</p> <p>4 Q. Do you know how she came to call you in the first</p> <p>5 place?</p> <p>6 A. From according to her?</p> <p>7 Q. Yes.</p> <p>8 A. Or according to me?</p> <p>9 Q. Well, what is your understanding as to why she</p> <p>10 initiated that initial call, how she came to get your</p> <p>11 name?</p> <p>12 A. She found me on what do you call it -- Med Web, because</p> <p>13 I had published this review article in this very</p> <p>14 prestigious journal called OB-GYN Oncology. Want to</p> <p>15 let me finish?</p> <p>16 MS. O'DELL: Yes, you may finish.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. Are you finished?</p> <p>19 A. No.</p> <p>20 Q. How much more is there?</p> <p>21 A. Okay --</p> <p>22 MS. O'DELL: You may finish, Doctor.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. You mentioned that you did not agree to serve as a</p> <p>25 consultant at the time of the first call, correct?</p>	<p style="text-align: right;">Page 277</p> <p>1 THE WITNESS: I agreed to serve as a</p> <p>2 consultant for oxidative stress and ovarian cancer in</p> <p>3 actually the first phone call.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. With regard to your work in this litigation, have you</p> <p>6 reviewed any of the expert reports of any other experts</p> <p>7 designated by plaintiffs?</p> <p>8 A. Barely I remember one or two, just briefly. I don't</p> <p>9 even remember names.</p> <p>10 Q. Have you reviewed, for purposes of your opinions in</p> <p>11 this case, anything that you did not bring with you</p> <p>12 here today?</p> <p>13 A. Good question, no.</p> <p>14 Q. Are there any necessary changes to your expert report?</p> <p>15 A. As --</p> <p>16 Q. As you sit here today.</p> <p>17 A. As of now today, no.</p> <p>18 Q. Have you ever had your deposition taken before?</p> <p>19 A. No.</p> <p>20 Q. Have you ever been designated to serve as an expert</p> <p>21 witness in any lawsuit?</p> <p>22 A. No.</p> <p>23 Q. You are not a medical doctor, correct?</p> <p>24 A. No.</p> <p>25 Q. You brought with you a copy of your updated CV; is that</p>

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<p style="text-align: right;">Page 278</p> <p>1 correct?</p> <p>2 A. Correct.</p> <p>3 Q. Yes. I'm going to mark this Exhibit Number 18.</p> <p>4 SAED DEPOSITION EXHIBIT NUMBER 18,</p> <p>5 CURRICULUM VITAE,</p> <p>6 WAS MARKED BY THE REPORTER</p> <p>7 FOR IDENTIFICATION</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. The CV you brought with you today, is that your current</p> <p>10 curriculum vitae?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. Thank you. You don't treat ovarian cancer</p> <p>13 patients, correct?</p> <p>14 A. I am not an M.D., I'm not a medical doctor.</p> <p>15 Q. Do you teach any courses?</p> <p>16 A. In the university, yes.</p> <p>17 Q. What courses do you teach?</p> <p>18 A. They are listed here in my CV.</p> <p>19 Q. Listed in your CV?</p> <p>20 A. Yes.</p> <p>21 Q. Do you teach medical students?</p> <p>22 A. I do.</p> <p>23 Q. Those would be listed in your CV?</p> <p>24 A. Everything I teach is listed here.</p> <p>25 Q. What percentage of your time is spent teaching?</p>	<p style="text-align: right;">Page 280</p> <p>1 and ovarian cancer for purposes of developing your</p> <p>2 opinions in this case?</p> <p>3 A. To my best knowledge, yes, only like three papers out</p> <p>4 there.</p> <p>5 Q. I'm sorry?</p> <p>6 A. There are only like three papers out there that I can</p> <p>7 remember.</p> <p>8 Q. Did you do a search yourself for literature concerning</p> <p>9 talc and ovarian cancer?</p> <p>10 A. Yes.</p> <p>11 Q. What search engines or tools did you use?</p> <p>12 A. I used what I always use, the PopMed.</p> <p>13 Q. You say in your report that an enhanced redox state has</p> <p>14 been described with epithelial ovarian cancer.</p> <p>15 A. I'm sorry, one more time.</p> <p>16 Q. Is it your opinion that an enhanced redox state has</p> <p>17 been described in patients with epithelial ovarian</p> <p>18 cancer?</p> <p>19 A. With ovarian cancer patients, yes.</p> <p>20 Q. And enhanced redox state has been described with other</p> <p>21 types of cancer, too, correct? It's not unique to</p> <p>22 ovarian cancer?</p> <p>23 A. Okay, I don't know about other cancer, that's not my --</p> <p>24 what I do. What I do, what I talk about, what I work</p> <p>25 with is ovarian cancer. So we did work in my lab only</p>
<p style="text-align: right;">Page 279</p> <p>1 A. Okay, so we have two types of teaching in our</p> <p>2 institution they consider teaching. We have formal</p> <p>3 courses and then we have hands-on teaching, which is</p> <p>4 required for our residency program and fellowship</p> <p>5 program. I do more of the hands-on for the medical</p> <p>6 doctors for our residents and fellows in the</p> <p>7 department, then I help them write their thesis, design</p> <p>8 their experiments, do the work, so that's my primary --</p> <p>9 I spend almost significant time. I can't tell you</p> <p>10 exactly what I spend on that part, but I do.</p> <p>11 Q. Have you applied to be a full professor at Wayne State</p> <p>12 University?</p> <p>13 A. No.</p> <p>14 Q. Why not?</p> <p>15 A. Applying for a full professor at our institution</p> <p>16 requires current NIH NCI only funding, which is very</p> <p>17 hard to get these days.</p> <p>18 Q. Is it your opinion that talc induces chemoresistance?</p> <p>19 A. Talc induces chemoresistance -- so we -- I have not</p> <p>20 tested that, so this needs to be tested.</p> <p>21 Q. In connection with developing and setting out your</p> <p>22 opinions in this case, did you review all of the animal</p> <p>23 literature looking at talc and ovarian cancer?</p> <p>24 A. All of the literature, no.</p> <p>25 Q. Did you review all of the cell studies looking at talc</p>	<p style="text-align: right;">Page 281</p> <p>1 with ovarian cancer and these markers.</p> <p>2 Q. Has an enhanced redox state been described with other</p> <p>3 diseases besides cancer?</p> <p>4 A. One more time, please.</p> <p>5 MS. O'DELL: Object to form.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Has an enhanced redox state been described with</p> <p>8 diseases other than cancer?</p> <p>9 A. I don't know.</p> <p>10 Q. You have done research looking at that pathogenesis of</p> <p>11 tissue fibrosis, correct?</p> <p>12 A. Correct.</p> <p>13 Q. Tissue fibrosis does not increase the risk of</p> <p>14 developing cancer, correct?</p> <p>15 A. Not correct.</p> <p>16 Q. So it's your opinion that having -- that fibrosis</p> <p>17 increases the risk of cancer?</p> <p>18 A. Not correct, that's not my opinion.</p> <p>19 Q. What is your opinion with regard to the relationship</p> <p>20 between fibrosis and cancer?</p> <p>21 A. Good, I like that question. So initially when I</p> <p>22 started all this work, I was interested in tissue</p> <p>23 fibrosis and, in particular, keloids, hypertrophic</p> <p>24 scars, postoperative adhesions development, and</p> <p>25 fibroids, endometriosis, trying to answer one question</p>

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<p style="text-align: right;">Page 282</p> <p>1 in my mind, which is -- which started this whole focus</p> <p>2 of work, why, how come we have an overgrowth that is --</p> <p>3 has similar pathogenesis, yet it's not malignant, for</p> <p>4 example, fibroids, they're benign tumors, they're</p> <p>5 tumors, they're benign, what is the difference between</p> <p>6 what makes this tumor benign versus malignant? So this</p> <p>7 is my focus and my long-term interest in my life is to</p> <p>8 figure out why is this overgrowth that has oxidative</p> <p>9 stress, high this, high this, high this, but it's not</p> <p>10 malignant, fibroids, possibility of adhesions, keloids,</p> <p>11 although some keloids develop -- some fibrosis</p> <p>12 development of cancer, and endometriosis, for example.</p> <p>13 So that's the question that I'm really interested in.</p> <p>14 So that's why we look everything in comparison. I have</p> <p>15 published in here and I have published in here</p> <p>16 extensively.</p> <p>17 Q. You have published that fibrosis causes cancer?</p> <p>18 A. No, I have published that the process of fibrosis is</p> <p>19 very similar to the process of oncogenesis.</p> <p>20 Q. Does fibrosis cause cancer?</p> <p>21 MS. O'DELL: Object to form.</p> <p>22 THE WITNESS: In some cases it may.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Give me an example of a type of fibrosis that can cause</p> <p>25 cancer.</p>	<p style="text-align: right;">Page 284</p> <p>1 postoperative adhesions development may develop into</p> <p>2 cancer. I'm not aware of that.</p> <p>3 BY MR. KLATT:</p> <p>4 Q. You're not aware of any evidence of that, is that what</p> <p>5 you're saying?</p> <p>6 A. I'm not aware of a certain -- a specific situation</p> <p>7 where a patient developed postoperative adhesions, that</p> <p>8 postoperative adhesions causes some type of cancer</p> <p>9 somewhere.</p> <p>10 Q. I'm going to skip around just to follow up on some</p> <p>11 stuff that Mr. Hegarty brought up during the day. You</p> <p>12 mentioned your company DS Biotech this morning. What</p> <p>13 does DS stand for?</p> <p>14 A. A name I chose.</p> <p>15 Q. The D and the S don't stand for anything in particular?</p> <p>16 A. Oh, sorry, I missed the question. So D is Diamond Saed</p> <p>17 Biotech, that's my partner, used to be long time ago.</p> <p>18 Q. You had a partner named Diamond?</p> <p>19 A. Michael Diamond. When we first initiated this, we</p> <p>20 started it, but then he moved from my institution to</p> <p>21 his institution, and then I acquired the whole company.</p> <p>22 Q. So Dr. Diamond -- is it a Dr. Diamond?</p> <p>23 A. Dr. Diamond, yes.</p> <p>24 Q. He has no affiliation with DS Biotech any longer, is</p> <p>25 that true?</p>
<p style="text-align: right;">Page 283</p> <p>1 A. Keloids, fibroblastoma can develop, endometriosis can</p> <p>2 induce maybe ovarian cancer, there's a link between the</p> <p>3 two.</p> <p>4 Q. Do postoperative adhesions cause cancer?</p> <p>5 A. We don't know.</p> <p>6 Q. Doctor, I'm going to rest for a moment and let my</p> <p>7 colleague representing Imerys ask you some questions as</p> <p>8 well.</p> <p>9 EXAMINATION BY MR. KLATT:</p> <p>10 Q. Hello, Dr. Saed. My name is Mike Klatt and I represent</p> <p>11 Imerys Talc America in this case. Have you ever heard</p> <p>12 of Imerys Talc America before today?</p> <p>13 A. Heard on the news, yes.</p> <p>14 Q. I'm sorry?</p> <p>15 A. Heard about it, yes.</p> <p>16 Q. What do you know about Imerys?</p> <p>17 A. I know that very small thing, mining company.</p> <p>18 Q. How did you learn that?</p> <p>19 A. From the news.</p> <p>20 Q. You said just a minute ago that we don't know whether</p> <p>21 postoperative intra-abdominal adhesions cause cancer;</p> <p>22 is that true?</p> <p>23 A. I am not aware --</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: -- that incidence of</p>	<p style="text-align: right;">Page 285</p> <p>1 A. No, for the last even seven, eight years.</p> <p>2 Q. When's the last time you had an NIH NCI grant?</p> <p>3 A. It should be in my CV, really bad memory, although I</p> <p>4 should remember such a great thing. You want me to</p> <p>5 look for it?</p> <p>6 Q. How long's it going to take you?</p> <p>7 A. I don't know, I have to look in my list of grants --</p> <p>8 when was it, when was it -- do you want me to</p> <p>9 approximate?</p> <p>10 Q. Sure.</p> <p>11 A. NIH -- I think it's 2005 -- pending, submitted --</p> <p>12 previously funded, okay, here we go. So I was part of</p> <p>13 the -- I was co-principal investigator in the Wayne</p> <p>14 State University partnership to promote diversity for</p> <p>15 reproductive sciences, that was 3,020,000 something. I</p> <p>16 was a co-investigator with Dr. Michael Diamond as a</p> <p>17 principal investigator to this Wayne State Clinical</p> <p>18 Translational Science Award.</p> <p>19 Q. What year is the question?</p> <p>20 A. So there are many, 2015, 2012, 2012, 2012, this was the</p> <p>21 major one where I was the principal investigator</p> <p>22 looking for adhesions and the role of hypoxia, and that</p> <p>23 was 2012.</p> <p>24 Q. What level NIH grant was that?</p> <p>25 A. That's an RO1.</p>

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<p style="text-align: right;">Page 286</p> <p>1 Q. Can ovulation cause the DNA damage that results in</p> <p>2 ovarian cancer?</p> <p>3 A. You are asking my opinion?</p> <p>4 Q. Yes.</p> <p>5 A. Or my -- based on science?</p> <p>6 Q. Well, I hope your opinion's based on science, but what</p> <p>7 is your opinion?</p> <p>8 A. Okay. So ovulation theory has been there for a long</p> <p>9 time, and I don't know if there is a link between</p> <p>10 ovulation and damage to DNA particular to that.</p> <p>11 Q. Is ovulation an inflammatory event?</p> <p>12 A. It is.</p> <p>13 Q. And in a woman that has a normal reproductive life,</p> <p>14 that can occur 2, 400 times in her lifetime, correct?</p> <p>15 A. I am not a reproductive scientist.</p> <p>16 Q. You don't know?</p> <p>17 A. I don't know.</p> <p>18 Q. Woman that has a 40-year reproductive life times 12?</p> <p>19 A. I do know that.</p> <p>20 Q. That's 480 ovulatory cycles, correct?</p> <p>21 A. If you say so, I don't know.</p> <p>22 Q. You don't know about this?</p> <p>23 A. I do know --</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: Excuse me, okay, I am not --</p>	<p style="text-align: right;">Page 288</p> <p>1 A. Not correct.</p> <p>2 Q. You don't know that?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: It's a theory; I just answered</p> <p>5 you.</p> <p>6 BY MR. KLATT:</p> <p>7 Q. Are you aware of the data that lifetime ovulations is</p> <p>8 directly related to ovarian cancer risk?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: So do you mean that there are</p> <p>11 data out there that is showing a direct link to normal</p> <p>12 ovulation process and the development -- increased risk</p> <p>13 of getting ovarian cancer?</p> <p>14 BY MR. KLATT:</p> <p>15 Q. Thank you.</p> <p>16 MR. LAPINSKI: Doctor, was that an answer or</p> <p>17 a question?</p> <p>18 THE WITNESS: That was a question to you.</p> <p>19 BY MR. KLATT:</p> <p>20 Q. Well, I'm asking the questions, you're giving me the</p> <p>21 answers. Are you aware of data that increased number</p> <p>22 of lifetime ovulations increases ovarian cancer risk?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: And then I answered you, I</p> <p>25 answered you, if you mean that you're looking for</p>
<p style="text-align: right;">Page 287</p> <p>1 again, I am not a reproductive scientist, so I know as</p> <p>2 much as anybody know, like ovulation, yes, I do know</p> <p>3 about it, I know about the ovulation theory, I know</p> <p>4 that ovulation is cause of inflammation, I do know all</p> <p>5 that.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. And is it your opinion, as a scientist who studied in</p> <p>8 the field you studied, that ovulation can cause ovarian</p> <p>9 cancer?</p> <p>10 A. I don't know, it needs to be tested.</p> <p>11 Q. Even though it's an inflammatory event that occurs</p> <p>12 every month, correct?</p> <p>13 A. Maybe that's a natural inflammatory response.</p> <p>14 Q. But you don't know, one way or the other, correct?</p> <p>15 A. Yeah, there's a big difference between a naturally-</p> <p>16 induced inflammatory response versus an external</p> <p>17 exogenous induced inflammation.</p> <p>18 Q. Certainly you're aware it's the opinion of many in the</p> <p>19 field that incessant ovulation does cause ovarian</p> <p>20 cancer, correct.</p> <p>21 A. That was just a theory.</p> <p>22 Q. I'm sorry?</p> <p>23 A. A theory.</p> <p>24 Q. And certainly ovarian cancer risk is directly related</p> <p>25 to number of lifetime ovulations, correct?</p>	<p style="text-align: right;">Page 289</p> <p>1 specific data that linking normal ovulation to</p> <p>2 inflammation that causes or increases the risk of</p> <p>3 ovarian cancer, is that what you mean?</p> <p>4 BY MR. KLATT:</p> <p>5 Q. I'm simply asking you if you're aware of data that</p> <p>6 number of lifetime or of ovulations correlates with</p> <p>7 increased ovarian cancer risk; that's all I'm asking.</p> <p>8 A. My answer again, I'm aware that this is a theory, and I</p> <p>9 don't know if it's based on data.</p> <p>10 Q. Is the mechanism that causes post-surgical adhesions</p> <p>11 the same mechanism that you think can result in ovarian</p> <p>12 cancer?</p> <p>13 A. No, they have similarities but not the same.</p> <p>14 Q. Can oxidative stress be induced by low vitamin E?</p> <p>15 A. I don't know.</p> <p>16 Q. Can oxidative stress be induced by low vitamin C?</p> <p>17 A. I don't know.</p> <p>18 Q. Can oxidative stress be induced by low uric acid?</p> <p>19 A. We never tested that.</p> <p>20 Q. Can oxidative stress be induced by albumin levels?</p> <p>21 A. We never tested that.</p> <p>22 Q. You said you'd never given a deposition before,</p> <p>23 correct?</p> <p>24 A. Correct.</p> <p>25 Q. And you've also never testified in a court before, is</p>

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<p style="text-align: right;">Page 290</p> <p>1 that right?</p> <p>2 A. Correct.</p> <p>3 Q. Early this morning you said that high, very high doses</p> <p>4 of talc were toxic to cells. What did you mean by</p> <p>5 that?</p> <p>6 A. We tried 1,000 micrograms per ml, 1,000 micrograms per</p> <p>7 ml, induced toxicity, so decreased viability, yes.</p> <p>8 Q. How are you defining toxicity at this time?</p> <p>9 A. Decreases cell viability.</p> <p>10 Q. Does that mean decrease in cell number?</p> <p>11 A. No, I said cell viability.</p> <p>12 Q. What does that mean?</p> <p>13 A. Death.</p> <p>14 Q. Okay.</p> <p>15 A. Okay.</p> <p>16 Q. Do you agree with me that CA-125 levels can be</p> <p>17 increased or elevated by pregnancy?</p> <p>18 A. I don't know this information.</p> <p>19 Q. Can CA-125 levels be increased during the menstrual</p> <p>20 period?</p> <p>21 A. I am not an OB-GYN oncologist, I am not an expert in</p> <p>22 this. I defer this to a clinician.</p> <p>23 Q. Can CA-125 levels be increased by women who have</p> <p>24 uterine fibroids?</p> <p>25 A. Again, I gave you my answer.</p>	<p style="text-align: right;">Page 292</p> <p>1 Q. And in the lower right-hand corner there's two page</p> <p>2 numbers. One's a stamped page number that we call a</p> <p>3 Bates Number, and the other is a handwritten page</p> <p>4 number, correct?</p> <p>5 A. This and this? Yes.</p> <p>6 MS. O'DELL: Yes.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. When were those handwritten page numbers added to the</p> <p>9 lab book?</p> <p>10 A. I don't know.</p> <p>11 Q. Because we had gotten a black and white copy of the lab</p> <p>12 book, and there were no page numbers on it, so were</p> <p>13 they added recently?</p> <p>14 A. No, definitely not. They should have them, you should</p> <p>15 have them in your black, white and black.</p> <p>16 Q. Would you look at Exhibit 1 handwritten Page 31 Bates</p> <p>17 Number, and I'll just say the last two Bates Numbers</p> <p>18 02.</p> <p>19 A. Page 2, you said?</p> <p>20 Q. Yes, Page 02 is the stamp number and Page 31 --</p> <p>21 A. Yes.</p> <p>22 Q. -- is the handwritten number.</p> <p>23 A. I'm looking at it.</p> <p>24 Q. Down at the bottom it says cells doubled in one day.</p> <p>25 What's that referring to?</p>
<p style="text-align: right;">Page 291</p> <p>1 Q. Can CA-125 be increased by coronary heart disease?</p> <p>2 A. I don't know.</p> <p>3 Q. Can you look at Exhibit Number 1, please, which I</p> <p>4 believe is the copy of your lab book.</p> <p>5 A. Lab report, okay.</p> <p>6 Q. And I'm going to -- does your copy have the Bates</p> <p>7 Numbers down on the right-hand corner?</p> <p>8 MS. O'DELL: He's looking at the actual lab</p> <p>9 notebook.</p> <p>10 MR. KLATT: Is it Bates Numbered?</p> <p>11 MS. O'DELL: Not the lab notebook, no. We</p> <p>12 have not made markings on this.</p> <p>13 MR. KLATT: Do you have a copy of Exhibit 1?</p> <p>14 Let's make sure we're referring --</p> <p>15 MS. O'DELL: I think that may be yours, and,</p> <p>16 Mike, if you wouldn't mind directing us to the page</p> <p>17 number that's written on the actual book itself.</p> <p>18 MR. KLATT: Yeah, I'll give both the Bates</p> <p>19 number and the page number.</p> <p>20 MS. O'DELL: That would be good.</p> <p>21 BY MR. KLATT:</p> <p>22 Q. Are you looking now at Exhibit 1, Doctor?</p> <p>23 A. Yes.</p> <p>24 Q. And it's a copy of the lab notebook, correct?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 293</p> <p>1 A. Okay, so when you culture the cells, you want to get --</p> <p>2 cells divide and they double, so you want to have them</p> <p>3 in the stage -- that's just a notation that the cell</p> <p>4 doubled so we can start the experiment.</p> <p>5 Q. And so were these cells doubling each day?</p> <p>6 A. No, no, not necessarily. This is just to follow up the</p> <p>7 progress of cell growth. And then we take from that 1</p> <p>8 million cells, and then we start, because the space for</p> <p>9 the cell is very important, so if they don't double in</p> <p>10 one day, it means that the space is not good and they</p> <p>11 are overcrowded, so now we split them. So this is an</p> <p>12 indication that they're ready for us so we can use.</p> <p>13 Q. Did you try to measure cell proliferation in the</p> <p>14 presence of talc by BRDU incorporation?</p> <p>15 A. What is PRDU?</p> <p>16 Q. BRDU incorporation, are you familiar with that method?</p> <p>17 A. BRDU? I've never heard of that.</p> <p>18 Q. What about Ki-67, did you use that method --</p> <p>19 A. No.</p> <p>20 Q. -- in your experiments to measure cell proliferation?</p> <p>21 A. As I stated earlier, Ki-67 is used by pathologists</p> <p>22 mainly or researchers in tissue sections.</p> <p>23 Q. My question is did you use it in this --</p> <p>24 A. No.</p> <p>25 Q. -- experiment? Did you try to count cells to measure</p>

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<p style="text-align: right;">Page 294</p> <p>1 proliferation using a hemocytometer?</p> <p>2 A. Okay, for cell proliferation we use MTT assay, that's</p> <p>3 even more accurate than what you're referring to, but</p> <p>4 we always count cells with hemocytometer to start with</p> <p>5 1 million cells, this is how we start.</p> <p>6 Q. But did you try to measure cell proliferation in your</p> <p>7 experiments by using a hemocytometer in cell counting?</p> <p>8 A. Cell proliferation cannot be measured by cell count.</p> <p>9 Q. Would you agree with me that MTT is not the optimal</p> <p>10 method to measure cell proliferation?</p> <p>11 A. It is one of the best methods we have tested.</p> <p>12 Q. It simply measures cell metabolism, doesn't it?</p> <p>13 A. It measures the -- it differentiates between cells,</p> <p>14 cells that incorporate the dye versus cells that it</p> <p>15 doesn't incorporate the dye, which means it</p> <p>16 differentiates between viable cells and proliferative</p> <p>17 cells.</p> <p>18 Q. And if you increase the metabolism of a certain number</p> <p>19 of cells, that will increase the dye level even if you</p> <p>20 don't have a greater number of cells?</p> <p>21 A. I don't know about metabolism that you're throwing in</p> <p>22 here.</p> <p>23 Q. You don't know about that?</p> <p>24 A. No.</p> <p>25 Q. Can you look again, referring to Exhibit 1, and I'm</p>	<p style="text-align: right;">Page 296</p> <p>1 A. Oh, that's a different question. I thought you were</p> <p>2 talking about the sample ID refers to what. That's my</p> <p>3 answer.</p> <p>4 Q. I'm talking about in your experiment.</p> <p>5 A. In my experiment, we took like, for example, normal</p> <p>6 macrophages from one plate, and we divided that into</p> <p>7 two. One plate got treatment, the other plate no</p> <p>8 treatment. And then we continue, we isolated RNA.</p> <p>9 Q. So for, for example, let's take Sample ID 357, EL1 5</p> <p>10 micrograms of talc?</p> <p>11 A. Yes.</p> <p>12 Q. That was on one plate?</p> <p>13 A. Okay, let me explain this one more time. So you</p> <p>14 take -- this is the stock samples, we call it 356,</p> <p>15 okay. We split that into -- we take -- we can --</p> <p>16 that's why when you said one plate, it's not true,</p> <p>17 because we take one, two, three, four plates, okay, so</p> <p>18 each plate will get the treatment like 5 micrograms, 20</p> <p>19 micrograms, 100 micrograms.</p> <p>20 Q. I understand that. I'm just talking about Sample 357?</p> <p>21 A. 357 is 1 million cells of macrophages treated with 5</p> <p>22 microgram per ml of talc.</p> <p>23 Q. And it was one plate?</p> <p>24 A. 1 million cells, one plate.</p> <p>25 Q. And then from that you took mRNA, correct?</p>
<p style="text-align: right;">Page 295</p> <p>1 referring to the Bates Stamped page that ends in -- the</p> <p>2 stamp number is 03 and the handwritten Page 32.</p> <p>3 A. Yes.</p> <p>4 Q. And there's a list there of sample IDs, is that</p> <p>5 correct?</p> <p>6 A. Correct.</p> <p>7 Q. And are those the cell lines that you tested in your</p> <p>8 experiments?</p> <p>9 A. Yes, in this experiment.</p> <p>10 Q. And I want to make sure I understand, for each sample</p> <p>11 ID, let's just take the first one Sample ID 356, the</p> <p>12 EL1 untreated, so would that sample represent one plate</p> <p>13 of those cells?</p> <p>14 A. The 356?</p> <p>15 Q. Right?</p> <p>16 A. It represents an aliquot of normal macrophages with no</p> <p>17 treatment with talc.</p> <p>18 Q. And is it one plate of cells?</p> <p>19 A. It could be one if we need or two or three or four,</p> <p>20 depends on --</p> <p>21 Q. What was it in this case?</p> <p>22 A. Any sample that carry this number is a normal</p> <p>23 macrophages, you can have it in one plate, two plates,</p> <p>24 five plates, 10 plates.</p> <p>25 Q. And what did you have it in your experiment?</p>	<p style="text-align: right;">Page 297</p> <p>1 A. Correct.</p> <p>2 Q. And then from the mRNA from that one plate of cells,</p> <p>3 you took -- or created CDNA, correct?</p> <p>4 A. Correct.</p> <p>5 Q. And then at the end of the day, you measured that CDNA</p> <p>6 three separate times, correct?</p> <p>7 A. Correct.</p> <p>8 Q. And from the process I just described, that all</p> <p>9 originated for 357 from that one plate that was treated</p> <p>10 with 5 micrograms of talc, correct?</p> <p>11 A. One plate, yes.</p> <p>12 Q. And did you do that for each of the cell lines listed</p> <p>13 Samples 356 through 386?</p> <p>14 A. Yes, let me explain something here. So we --</p> <p>15 Q. That's all I needed.</p> <p>16 A. Okay. Can I explain something?</p> <p>17 Q. Sure.</p> <p>18 A. So I know what you're referring to that this is called</p> <p>19 N = 1, but we have even better and more precise way of</p> <p>20 measuring this very old method of doing it. We chose</p> <p>21 to do instead of repeat the same one three times, so</p> <p>22 N = 3, we actually chose three different normal cells</p> <p>23 and three different ovarian cancer cells, and that is</p> <p>24 more powerful than using the same one three times.</p> <p>25 Q. Okay.</p>

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<p style="text-align: right;">Page 298</p> <p>1 MR. LOCKE: Can I just make an objection.</p> <p>2 Those are the kind of answers that your counsel can ask</p> <p>3 you the question so you can give an explanation. All</p> <p>4 of the defendants don't have time to question you, so</p> <p>5 "yes" or "no" would be helpful, particularly at this</p> <p>6 point where we're really running out of time.</p> <p>7 MS. O'DELL: Well, he's been asking specific</p> <p>8 questions about plates, and for it not to be clear, and</p> <p>9 he needs to -- he needs to give a responsive answer.</p> <p>10 MR. LOCKE: We're wasting time.</p> <p>11 BY MR. KLATT:</p> <p>12 Q. What I want to know is for 357 and all the sample IDs</p> <p>13 listed here, there was one individual plate for each</p> <p>14 sample ID treated with a certain level of talc,</p> <p>15 correct?</p> <p>16 A. Correct.</p> <p>17 Q. Easy, Doctor.</p> <p>18 A. Thank you.</p> <p>19 Q. Gene expression, measuring gene expression is not the</p> <p>20 same thing as measuring gene mutations, correct?</p> <p>21 A. Gene expression refers to mRNA levels that is reflected</p> <p>22 in protein levels.</p> <p>23 Q. Gene expression is something that occurs all the time</p> <p>24 in our bodies every day, correct?</p> <p>25 A. Correct.</p>	<p style="text-align: right;">Page 300</p> <p>1 Q. The major source of ROS comes from inside the cells</p> <p>2 from mitochondria, correct?</p> <p>3 A. Not accurate answer, no.</p> <p>4 Q. Can you distinguish between ROS produced inside the</p> <p>5 mitochondria of the cell from ROS produced outside the</p> <p>6 cell?</p> <p>7 A. There are some enzymes that are produced from the</p> <p>8 mitochondria like SOD in different forms, and there are</p> <p>9 SODs that are produced from the membrane of the cell</p> <p>10 and the cytoplasm, so it depends.</p> <p>11 Q. Do you agree that the persistent generation of cellular</p> <p>12 ROS is a consequence of aging?</p> <p>13 A. I didn't study aging.</p> <p>14 Q. You haven't said that before?</p> <p>15 A. That --</p> <p>16 Q. The persistent generation of cellular ROS is a</p> <p>17 consequence of aging.</p> <p>18 A. I don't remember. Aging of the cells or aging of</p> <p>19 people?</p> <p>20 Q. Aging of people.</p> <p>21 A. I don't remember I said that.</p> <p>22 Q. You didn't sequence the DNA in your studies to</p> <p>23 determine mutations, correct? You only used the SNP</p> <p>24 gene assay?</p> <p>25 A. I used the SNP gene assay, yes.</p>
<p style="text-align: right;">Page 299</p> <p>1 Q. It's how we live as people, right?</p> <p>2 A. Yes.</p> <p>3 Q. If we didn't have gene expression, we'd be dead?</p> <p>4 A. I don't know why you're saying that.</p> <p>5 Q. Is it true?</p> <p>6 A. Of course.</p> <p>7 Q. You would agree with me that a reactive oxygen species,</p> <p>8 and can we call that ROS for short, Doctor?</p> <p>9 A. Yes, I'm thinking, reactive oxygen and reactive</p> <p>10 nitrogen species, let's call them oxidants.</p> <p>11 Q. I'm sorry?</p> <p>12 A. Oxidants.</p> <p>13 Q. Oxidants? Well, what if I'm specifically asking about</p> <p>14 ROS, reactive oxygen --</p> <p>15 A. You can, it depends on which one you would specify I</p> <p>16 would answer, yes.</p> <p>17 Q. Okay. So if I say ROS, can we agree I'm talking about</p> <p>18 reactive oxygen species?</p> <p>19 A. Yes. Which one, though? You have to tell me.</p> <p>20 Q. As a category.</p> <p>21 A. Okay, keep going.</p> <p>22 Q. ROS aren't the same thing as inflammation, correct?</p> <p>23 A. Not correct.</p> <p>24 Q. ROS are a part of normal cell physiology, correct?</p> <p>25 A. Normal levels of ROS found in cells, yes.</p>	<p style="text-align: right;">Page 301</p> <p>1 Q. You realize the same company that made the SNP gene</p> <p>2 assay that you used also makes a gene mutation assay?</p> <p>3 A. No, I'm not aware of that.</p> <p>4 Q. You're not aware of that?</p> <p>5 A. No.</p> <p>6 Q. But so, therefore, you did not use that company's gene</p> <p>7 mutation assay in your experiments, correct?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: I used the core facility at our</p> <p>10 institutions, and this is what they ran and this is</p> <p>11 what I have.</p> <p>12 BY MR. KLATT:</p> <p>13 Q. So you did not use the gene mutation assay made by the</p> <p>14 same company that makes the SNP assay that you used in</p> <p>15 your studies, correct?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: The core facility ordered the</p> <p>18 kits, and they are the one who choose which company to</p> <p>19 buy it from. I have no influence in that.</p> <p>20 BY MR. KLATT:</p> <p>21 Q. So was the core facility the one that decided to use</p> <p>22 the SNP assay rather than the gene mutation assay or</p> <p>23 was that your decision?</p> <p>24 A. That was what is available in the core facility, and I</p> <p>25 said I want to use it.</p>

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<p style="text-align: right;">Page 302</p> <p>1 Q. But you were unaware that the same company that makes</p> <p>2 the SNP assay also makes a gene mutation assay; is that</p> <p>3 true?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: I don't even know what company</p> <p>6 you're talking about.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. Do you know what company made the SNP assay?</p> <p>9 A. The core facility ordered the SNP kit, they just give</p> <p>10 you -- I'm interested in doing the SNP mutation and</p> <p>11 this is what we run, so please run these samples for</p> <p>12 me.</p> <p>13 Q. Did you ask them not to use a gene mutation assay?</p> <p>14 A. Not to use? I didn't ask them, no.</p> <p>15 Q. Would you agree with me that the determination of the</p> <p>16 redox state of a cell is determined by far more enzymes</p> <p>17 and proteins and substances than just the ones you</p> <p>18 looked at in your talc studies?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: We -- in my studies we looked</p> <p>21 at there are many enzymes, but we're looking at key</p> <p>22 enzymes that control the redox balance.</p> <p>23 BY MR. KLATT:</p> <p>24 Q. Object, nonresponsive. Do you agree with me that redox</p> <p>25 balance in cells is controlled by far more enzymes,</p>	<p style="text-align: right;">Page 304</p> <p>1 A. Saying it, I don't recall saying it.</p> <p>2 Q. Do you recall writing it?</p> <p>3 A. Maybe, but that does not agree with what you just said,</p> <p>4 what you read.</p> <p>5 Q. Can oxidative stress both promote apoptosis and promote</p> <p>6 cell survival?</p> <p>7 A. Oxidative stress is a balance, so it's not just simple</p> <p>8 process. So the outcome of this balance promote</p> <p>9 proliferation, promote survival, and decrease</p> <p>10 apoptosis.</p> <p>11 Q. Can oxidative stress be both pro-tumorigenic and</p> <p>12 anti-tumorigenic?</p> <p>13 A. You mean marker, some certain markers of oxidative</p> <p>14 stress? Is that what you're referring to?</p> <p>15 Q. Sure.</p> <p>16 A. Certain markers of oxidative stress can have -- can</p> <p>17 induce tumors and can inhibit tumor, I'm not really</p> <p>18 aware of that.</p> <p>19 Q. Are you aware of any study case report or case series</p> <p>20 that says that women that use talc in the external</p> <p>21 genital area have increased fibrosis or adhesions</p> <p>22 anywhere in their reproductive tract?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: Have I -- am I aware of people</p> <p>25 use talcum powder is linked to development of</p>
<p style="text-align: right;">Page 303</p> <p>1 proteins, and substances than you looked at in your</p> <p>2 talc studies?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: And I answered. I said</p> <p>5 these -- the one we looked at are the main, there are</p> <p>6 others, but they're not major players. Those are, the</p> <p>7 one we studied are the major contributor to the overall</p> <p>8 pro-oxidant state of the cell.</p> <p>9 BY MR. KLATT:</p> <p>10 Q. And some of those enzymes in some cancers are pro-</p> <p>11 tumorigenic and some of those same enzymes in other</p> <p>12 cancers are anti-tumorigenic, correct?</p> <p>13 A. I'm not aware of that.</p> <p>14 Q. You haven't said that before?</p> <p>15 A. Said that exact word? No.</p> <p>16 Q. Do you recall ever saying this: Decreasing oxidative</p> <p>17 stress and increased SOD promotes apoptosis in the</p> <p>18 cancer cell lines studied, but multiple other studies</p> <p>19 performed using other cell lines have shown the</p> <p>20 opposite, that decreased SOD can promote apoptosis?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: So this -- I said that? Or you</p> <p>23 took this from my --</p> <p>24 BY MR. KLATT:</p> <p>25 Q. I'm asking if you recall saying that?</p>	<p style="text-align: right;">Page 305</p> <p>1 possibility of adhesions?</p> <p>2 BY MR. KLATT:</p> <p>3 Q. I'm asking you a very specific question. Are you aware</p> <p>4 of any articles in the medical or scientific</p> <p>5 literature, any case studies, any case reports of women</p> <p>6 who used external talc having increased adhesions,</p> <p>7 fibrosis, granulomas anywhere in their reproductive</p> <p>8 tract?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: What do you mean by external?</p> <p>11 BY MR. KLATT:</p> <p>12 Q. What does external mean to you?</p> <p>13 A. I'm asking you.</p> <p>14 Q. I'm asking the questions, Doctor.</p> <p>15 A. Okay, I understand, I just want to clarify.</p> <p>16 Q. Do you understand what external talc application means?</p> <p>17 MS. O'DELL: You didn't say that, you just</p> <p>18 said external, so, anyway.</p> <p>19 If you understand his question, answer the</p> <p>20 question or define what you mean.</p> <p>21 BY MR. KLATT:</p> <p>22 Q. Let me ask the question again. Are you aware of any</p> <p>23 study in the medical or scientific literature, case</p> <p>24 report, that shows that external genital application of</p> <p>25 talc results in increased fibrosis, granulomas, or</p>

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<p style="text-align: right;">Page 306</p> <p>1 adhesions anywhere inside the female reproductive</p> <p>2 tract?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I'm not aware.</p> <p>5 BY MR. KLATT:</p> <p>6 Q. Are you aware that according to studies, anywhere from</p> <p>7 30 to 50 percent of U.S. women have used talc in the</p> <p>8 external genital area?</p> <p>9 A. I'm sorry, say that again, sorry.</p> <p>10 Q. Are you aware from studies that anywhere from 30 to 50</p> <p>11 percent of U.S. women have used talcum powder in the</p> <p>12 external genital area?</p> <p>13 A. I'm not sure about the number.</p> <p>14 Q. Are you aware of any epidemic of granulomas, fibrosis,</p> <p>15 or adhesions in women who use externally applied</p> <p>16 genital talc?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: I don't know if -- I don't know</p> <p>19 if any relation between talc powder use and adhesions.</p> <p>20 BY MR. KLATT:</p> <p>21 Q. Is there a way to measure the redox state directly</p> <p>22 inside of cells?</p> <p>23 A. Very difficult.</p> <p>24 Q. Can it be done?</p> <p>25 A. The data will not be very reliable.</p>	<p style="text-align: right;">Page 308</p> <p>1 look and see if I have any other notes.</p> <p>2 THE VIDEOGRAPHER: Going off the record at</p> <p>3 6:18 p.m.</p> <p>4 (An off-the-record discussion was held.)</p> <p>5 THE VIDEOGRAPHER: Back on the record at 6:19</p> <p>6 p.m.</p> <p>7 BY MR. KLATT:</p> <p>8 Q. Doctor, in your PCR studies, did you normalize for</p> <p>9 actin?</p> <p>10 A. Yes.</p> <p>11 Q. And how did you do that?</p> <p>12 A. So we did PCR for beta-actin.</p> <p>13 Q. And where is that indicated in your lab --</p> <p>14 A. It is page -- every experiment we did with PCR we ran</p> <p>15 beta-actin, and if you go to Page -- what's this page</p> <p>16 here --</p> <p>17 MS. O'DELL: What's the ending Bates Number</p> <p>18 on there?</p> <p>19 BY MR. KLATT:</p> <p>20 Q. There may be a Bates Number in the lower right hand</p> <p>21 corner.</p> <p>22 A. 10.</p> <p>23 Q. Okay. I'm with you.</p> <p>24 A. Are you there?</p> <p>25 Q. Yes.</p>
<p style="text-align: right;">Page 307</p> <p>1 Q. Is there a method to do that?</p> <p>2 A. You can measure H2O2, you can measure nitrosylation,</p> <p>3 degree of nitrosylation of protein, we have done that</p> <p>4 with Caspase-3 and S-nitrosylation of Caspase-3 as a</p> <p>5 measure of how the level of antioxidants. The accurate</p> <p>6 way to measure it is to measure the key players</p> <p>7 together to have the complete picture.</p> <p>8 Q. Those two methods that you just named, did you use</p> <p>9 those in any of your talc studies?</p> <p>10 A. What methods?</p> <p>11 Q. The methods you just listed for me which were a way to</p> <p>12 directly measure the redox state of cells.</p> <p>13 A. Measuring all markers? Oh, the other method, yes, they</p> <p>14 are listed here.</p> <p>15 Q. Did you use those?</p> <p>16 A. I'm sorry, I'm missing you. Am I use ever in my lab or</p> <p>17 in this study?</p> <p>18 Q. In the talc studies.</p> <p>19 A. The S-nitrosylation of Caspase-3, we did not use in</p> <p>20 this study.</p> <p>21 Q. And there was one other method that you mentioned.</p> <p>22 A. The H2O2.</p> <p>23 Q. Did you use that method in your talc --</p> <p>24 A. No, we used it for catalase activity indirectly.</p> <p>25 Q. Can we go off the record for a second. I just need to</p>	<p style="text-align: right;">Page 309</p> <p>1 A. It's even cut off from here, I don't know why. But you</p> <p>2 see the standard curve?</p> <p>3 Q. Yes.</p> <p>4 A. Okay, so what we do here, we do a realtime RT-PCR where</p> <p>5 we design a small oligo that is flanked by the primers,</p> <p>6 and we order that to be synthesized, and we know the</p> <p>7 concentration, we dilute it down, and we create a</p> <p>8 standard curve, and we use this standard curve to</p> <p>9 extrapolate the results and normalize for our level of</p> <p>10 mRNA with the treatment.</p> <p>11 Q. Can I ask you a question. On Page 10, that indicates</p> <p>12 raw data, correct?</p> <p>13 A. Page 10?</p> <p>14 Q. The page you were just looking at.</p> <p>15 A. I just want to see, it's not clear here. I just want</p> <p>16 to see what page is this here. I'm with you.</p> <p>17 MS. O'DELL: What's the question, Mike?</p> <p>18 BY MR. KLATT:</p> <p>19 Q. Looking at Page 10 on Exhibit 1, and I'm not talking</p> <p>20 about the lab page number, I'm talking about the Bates</p> <p>21 Number, if you look for Sample 356, you see to the</p> <p>22 right there's numbers 285995.18, 273439.209?</p> <p>23 A. Uh-huh.</p> <p>24 Q. And 409589.891?</p> <p>25 A. Correct.</p>

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<p>1 Q. If you turn to the next page, those numbers are</p> <p>2 replicated for Sample 356.</p> <p>3 A. What next page?</p> <p>4 Q. The very next page in the --</p> <p>5 A. Here?</p> <p>6 Q. Yeah.</p> <p>7 A. Okay. Where are they? 356, this is copies per</p> <p>8 micrograms of CDNA.</p> <p>9 Q. And that corresponds to those numbers, those same three</p> <p>10 numbers on the previous page, correct?</p> <p>11 A. So this is the copy number, 28274095, yeah, I see</p> <p>12 they're the same.</p> <p>13 Q. But for the 357 sample, the numbers don't correspond</p> <p>14 between those two pages, correct?</p> <p>15 A. Correct.</p> <p>16 Q. And can you explain why?</p> <p>17 A. So that's why we normalize, because you will have</p> <p>18 different copy numbers all the time, so we normalize</p> <p>19 it.</p> <p>20 Q. Can you go to the next page, which would be notebook</p> <p>21 page -- handwritten Page 39 and Bates Number 11.</p> <p>22 A. 39? I'm still on the same page, right?</p> <p>23 MS. O'DELL: That's where we were I thought,</p> <p>24 unless I was confused about your question.</p> <p>25 BY MR. KLATT:</p>	<p>1 A. Yeah. Is it Page 41?</p> <p>2 MS. O'DELL: You're on Page 11?</p> <p>3 MR. KLATT: Correct.</p> <p>4 MS. O'DELL: So I think it's this page.</p> <p>5 THE WITNESS: Oh. Isn't it this page?</p> <p>6 MS. O'DELL: No, I think it's back, if I'm</p> <p>7 not mistaken.</p> <p>8 THE WITNESS: Oh, here. We were on this</p> <p>9 page, right?</p> <p>10 BY MR. KLATT:</p> <p>11 Q. I'm confused because you're looking at the real lab</p> <p>12 notebook and I'm looking at --</p> <p>13 A. No, no, no, we were on the same page. I thought you</p> <p>14 asked me to go to a different page. I see that column.</p> <p>15 Q. Just so we're on the same wavelength --</p> <p>16 A. I see it.</p> <p>17 Q. -- I'm referring to Page 11 Bates Number, correct?</p> <p>18 A. Picogram per microgram for RNA.</p> <p>19 Q. Right.</p> <p>20 A. 4.58, the first number.</p> <p>21 Q. 4.58?</p> <p>22 A. Uh-huh.</p> <p>23 Q. Right, and if you go -- that whole column's full of</p> <p>24 numbers, correct?</p> <p>25 A. This column, yes.</p>
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<p>1 Q. Well, Bates Number -- my Bates Number's cut off, excuse</p> <p>2 me, my handwritten number's cut off so I'm going to the</p> <p>3 Bates Number, which is 11.</p> <p>4 MS. O'DELL: Okay, it's Page --</p> <p>5 THE WITNESS: The next page.</p> <p>6 BY MR. KLATT:</p> <p>7 Q. Okay. And do you see the column toward the right</p> <p>8 called picograms per microgram of RNA?</p> <p>9 A. Where is that?</p> <p>10 Q. The third column from the right-hand side.</p> <p>11 A. On Page -- in this page, right?</p> <p>12 Q. Page 11, Bates Stamped Page 11.</p> <p>13 A. This is the page, okay, this is the page. So you're</p> <p>14 looking at microgram?</p> <p>15 Q. Picograms per microgram per RNA, do you see that</p> <p>16 column?</p> <p>17 A. I see copies per microgram for RNA, I see copies per</p> <p>18 microgram for RNA, thintogram (sic) per microgram for</p> <p>19 RNA. Is what you're looking at?</p> <p>20 Q. I'm looking right here, picograms per micrograms RNA</p> <p>21 the third column from the right.</p> <p>22 A. 1, 2, 3, that's called thintogram (sic).</p> <p>23 Q. And what's the first number in that column?</p> <p>24 A. 125. Is that what you're looking at?</p> <p>25 Q. I think we're not looking in the same place.</p>	<p>1 Q. And then to the right of that you have an average,</p> <p>2 correct?</p> <p>3 A. Yes.</p> <p>4 Q. Sometimes you average two of the three numbers,</p> <p>5 sometimes you average all three numbers.</p> <p>6 A. Correct.</p> <p>7 Q. Why do you only average two of the three numbers</p> <p>8 sometimes?</p> <p>9 A. If we have outlier, really high, different.</p> <p>10 Q. And what's your criteria for throwing out an outlier?</p> <p>11 A. So if you have 4.5, 4.3, and 6.5, that's an outlier.</p> <p>12 Q. What's your threshold for classifying something as an</p> <p>13 outlier to not include it in your calculations?</p> <p>14 A. So if the two numbers match, the closer they match and</p> <p>15 the higher the outlier is is what we determine.</p> <p>16 Q. So do you always throw out the outlier of the three</p> <p>17 values?</p> <p>18 A. Not always, not necessarily.</p> <p>19 Q. So I'm just trying to figure what's your criteria</p> <p>20 for --</p> <p>21 A. So if they are like, for example, close like, for</p> <p>22 example, here, if we don't know that it is an outlier,</p> <p>23 like, for example, here, 3.6, 4.3, 3.2, it's very hard</p> <p>24 to determine an outlier, but if you have 6 and 6 and 7,</p> <p>25 it is not hard.</p>

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<p>1 Q. Do you have a certain numerical criteria that you use</p> <p>2 to classify something as an outlier that you're going</p> <p>3 to exclude from your calculations?</p> <p>4 A. I just told you.</p> <p>5 Q. What's the numerical value?</p> <p>6 A. I don't have a numerical value.</p> <p>7 Q. You just eyeball it?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: No, no, no, no, please, so I</p> <p>10 just said that if the two numbers, okay, agrees very</p> <p>11 close, the closer the two numbers together and the more</p> <p>12 further is the other number, that is considered an</p> <p>13 outlier to me.</p> <p>14 BY MR. KLATT:</p> <p>15 Q. But, again, you don't have any numerical formula that</p> <p>16 you follow to make that determination, correct?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: I told you what I follow.</p> <p>19 BY MR. KLATT:</p> <p>20 Q. When it's close together, you exclude the third one.</p> <p>21 When it's further apart, you --</p> <p>22 A. I did not say that.</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 BY MR. KLATT:</p> <p>25 Q. Then please explain numerically how you make the</p>	<p>1</p> <p>2 RE-EXAMINATION BY MR. HEGARTY:</p> <p>3 Q. Doctor, I'm showing you what I'm marking as Exhibit 19.</p> <p>4 Do you recognize Exhibit 19?</p> <p>5 A. It looks like the abstract we submitted to SGO.</p> <p>6 Q. This abstract in the middle refers to testing done at</p> <p>7 48 hours; is that correct?</p> <p>8 A. 48 hours is a typo everywhere you see it, I acknowledge</p> <p>9 that.</p> <p>10 Q. So you reported 48 hours in this abstract to SGO?</p> <p>11 A. Correct. It is wrong. All the work that I did it's 72</p> <p>12 hours.</p> <p>13 SAED DEPOSITION EXHIBIT NUMBER 20,</p> <p>14 ABSTRACT,</p> <p>15 WAS MARKED BY THE REPORTER</p> <p>16 FOR IDENTIFICATION</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. I'm going to mark as Exhibit Number 20 another abstract</p> <p>19 of yours; is that correct?</p> <p>20 A. Where is it -- talcum powder -- where was this?</p> <p>21 Q. Do you recognize this abstract?</p> <p>22 A. March 2018, okay.</p> <p>23 Q. In the middle you report treating cells at 0, 200, and</p> <p>24 500 micrograms per milliliter; is that correct?</p> <p>25 A. Yes, that was the initial study that we did.</p>
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<p>1 decision to exclude one of the three values --</p> <p>2 A. Okay.</p> <p>3 Q. -- or include it.</p> <p>4 A. One more time. So if the two number -- we have three</p> <p>5 numbers, right, three values. If two of the three</p> <p>6 values are very close, the closer they are together,</p> <p>7 and they are more further from the third one, that</p> <p>8 third one qualifies for outlier.</p> <p>9 Q. How close do the two have to be to exclude the third?</p> <p>10 A. Very close, have to be very close.</p> <p>11 Q. Numerically how --</p> <p>12 A. I don't know, I don't have a numerical value.</p> <p>13 Q. That's all the questions I have, Doctor.</p> <p>14 MR. HEGARTY: How much time do we have left?</p> <p>15 THE VIDEOGRAPHER: Two minutes left.</p> <p>16 MS. O'DELL: Do you have questions?</p> <p>17 MR. LOCKE: I do have a few.</p> <p>18 MS. O'DELL: You've got two minutes.</p> <p>19 MR. LOCKE: I know you've got some, too.</p> <p>20 MR. HEGARTY: I do.</p> <p>21 MR. LOCKE: Go ahead, Mark.</p> <p>22 SAED DEPOSITION EXHIBIT NUMBER 19,</p> <p>23 ABSTRACT SUBMITTED TO SGO,</p> <p>24 WAS MARKED BY THE REPORTER</p> <p>25 FOR IDENTIFICATION</p>	<p>1 Q. And that data is reflected in the notebooks we looked</p> <p>2 at?</p> <p>3 A. It's here, yes.</p> <p>4 MR. KLATT: Which notebook?</p> <p>5 MS. O'DELL: Exhibit 3.</p> <p>6 SAED DEPOSITION EXHIBIT NUMBER 21,</p> <p>7 ABSTRACT FROM SRI,</p> <p>8 WAS MARKED BY THE REPORTER</p> <p>9 FOR IDENTIFICATION</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. I'm going to mark next as Exhibit Number 21 another</p> <p>12 abstract of yours from SRI; is that correct?</p> <p>13 A. SRI, March 16, this one is -- what is the title --</p> <p>14 yeah, talcum powder -- yes.</p> <p>15 Q. In the method section you report treating cells with</p> <p>16 1,000 micrograms per milliliter of talc; is that</p> <p>17 correct?</p> <p>18 A. That's a typo that's 100.</p> <p>19 Q. That's another mistake?</p> <p>20 A. Yes, it's 100.</p> <p>21 MS. O'DELL: I think your time's gone.</p> <p>22 MR. HEGARTY: Okay. Well, we --</p> <p>23 THE WITNESS: And all those are the</p> <p>24 preliminary that we did.</p> <p>25 MR. HEGARTY: We have request for several</p>

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<p style="text-align: right;">Page 318</p> <p>1 documents to be produced, so we can go on the record</p> <p>2 before we finish the deposition. And then, also, we</p> <p>3 reserve the right, as we indicated at the beginning of</p> <p>4 the deposition, to seek additional time because of the</p> <p>5 late productions and, also, because of the</p> <p>6 nonresponsive nature Dr. Saed has been throughout the</p> <p>7 deposition.</p> <p>8 MS. O'DELL: I think the objection for one</p> <p>9 was objection for all, I think you made that rule,</p> <p>10 Mike, but I'm glad you put -- we're going to go off the</p> <p>11 record, and I may have a few questions for Dr. Saed.</p> <p>12 Before I do, I will say I think to state that Dr. Saed</p> <p>13 has not been responsive in his answers today is a</p> <p>14 misstate. The record and his testimony will be</p> <p>15 reflective that he was attempting to respond to the</p> <p>16 questions, very difficult technical questions, and so</p> <p>17 he's attempted to do his best, and as we said before,</p> <p>18 we've complied with all the orders of the Court and the</p> <p>19 Notice of Deposition, and we'll oppose efforts at this</p> <p>20 point for any additional time with him. So let's go</p> <p>21 off the record.</p> <p>22 MR. HEGARTY: And to the extent that you</p> <p>23 don't have any additional questions, I just want to go</p> <p>24 back on the record and make a note of the additional</p> <p>25 documents we want from Dr. Saed. We can do it now or</p>	<p style="text-align: right;">Page 320</p> <p>1 actually, maybe I should do it this way, I apologize.</p> <p>2 If you would, let me hand to you what was marked as the</p> <p>3 lab notebook for your -- the experiments that were done</p> <p>4 to and reported on in your manuscript and your report,</p> <p>5 Exhibit 1. Do you see those?</p> <p>6 A. Yes.</p> <p>7 Q. And if you turn to I think it was Page 57, Bates Number</p> <p>8 57 -- make sure I'm at the right page. Let me know</p> <p>9 when you get there, Doctor.</p> <p>10 A. 57?</p> <p>11 Q. Uh-huh.</p> <p>12 A. This page?</p> <p>13 Q. Maybe I wrote the page down -- oh, yeah, it's actually</p> <p>14 84 in -- it's 57 in there and it's 84 in your main lab</p> <p>15 notebook. You recall a number of questions about or</p> <p>16 two questions at least that I recall, and it refers to</p> <p>17 Page 84 in Exhibit 2 that corresponds to Bates Number</p> <p>18 57 of Exhibit 1, do you recall that, and there was --</p> <p>19 you were asked about a missing data table --</p> <p>20 A. Correct.</p> <p>21 Q. -- that did not make it into the scanned version.</p> <p>22 A. Correct.</p> <p>23 Q. Is the data contained in the table on Page 57 of the</p> <p>24 scanned -- excuse me -- 84 of the lab notebook</p> <p>25 contained in the figure below?</p>
<p style="text-align: right;">Page 319</p> <p>1 we can do it at the end.</p> <p>2 MS. O'DELL: Why don't we wait until the end.</p> <p>3 MR. HEGARTY: Okay.</p> <p>4 THE VIDEOGRAPHER: Going off the record at</p> <p>5 6:32 p.m.</p> <p>6 (A short recess was taken.)</p> <p>7 THE VIDEOGRAPHER: We're back on the record</p> <p>8 at 6:56 p.m.</p> <p>9 EXAMINATION BY MS. O'DELL:</p> <p>10 Q. Doctor, I wanted to follow up on a few questions.</p> <p>11 First, when you were acting as a consultant, you</p> <p>12 referred to yourself as a consultant a number of times</p> <p>13 today, was it your understanding as a consultant you</p> <p>14 were also an expert witness?</p> <p>15 A. Yes.</p> <p>16 Q. And so during all the time that you were conducting the</p> <p>17 studies that you testified to today, that you were</p> <p>18 preparing certain publications, you were working as an</p> <p>19 expert witness?</p> <p>20 MR. KLATT: Objection, leading.</p> <p>21 BY MS. O'DELL:</p> <p>22 Q. Were you working during that time period as an expert</p> <p>23 witness?</p> <p>24 A. Yes.</p> <p>25 Q. Okay. Let me see if I can direct you back to --</p>	<p style="text-align: right;">Page 321</p> <p>1 A. Yes.</p> <p>2 Q. And was that figure included in the version that was</p> <p>3 provided to defense counsel?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. I've got one more situation like this. If</p> <p>6 you'll turn to page -- let me get it -- it's 62 at the</p> <p>7 Bates Stamp Number version, Exhibit 1, and for the lab</p> <p>8 notebook it's Page 87.</p> <p>9 A. Yes.</p> <p>10 Q. And I think in this instance there was a table on</p> <p>11 Page 87 of the lab notebook that was not scanned in the</p> <p>12 electronic version. Is the data that's contained in</p> <p>13 the table on Page 87 also in the figure that was</p> <p>14 produced to Defendants?</p> <p>15 MR. HEGARTY: Objection, form. You can</p> <p>16 answer.</p> <p>17 THE WITNESS: Yes.</p> <p>18 BY MS. O'DELL:</p> <p>19 Q. You were also asked a series of questions about your</p> <p>20 manuscript and the use of the word marginal. Do you</p> <p>21 recall that discussion?</p> <p>22 A. Yes.</p> <p>23 Q. What did you intend by the use of the word marginal?</p> <p>24 A. I meant marked increase, marked difference.</p> <p>25 Q. Okay. Let me change directions with you. We got your</p>

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<p style="text-align: right;">Page 322</p> <p>1 notebook that's been marked or two notebooks that have 2 been marked Exhibit 11, and does that contain your 3 expert report in this case as well as the references 4 noted in your expert report? 5 A. Correct. 6 Q. And do you have any changes that you would like to make 7 in your expert report? 8 A. Yes, I do. 9 Q. Okay. 10 A. So I think during that note there were some references 11 that were mislabeled, so I would like to -- 12 Q. Tell us what page you're on. 13 A. Page 10, I'd like to add -- where it says 49, I would 14 like to add 51 there. 15 Q. And when you say 51, do go -- 16 A. Reference number 51. 17 Q. Okay. 18 A. Okay. And next page, Page 11, where it says 50 on the 19 top of the page, first line, I'd like to add the NTP 20 study 1993. 21 Q. Okay. 22 A. And on Page 12, I'd like to remove 4575. 23 Q. Okay. And where is that on Page 12? 24 A. On the middle paragraph. 25 Q. All right.</p>	<p style="text-align: right;">Page 324</p> <p>1 BY MS. O'DELL: 2 Q. You were asked a number of questions about your 3 manuscript today. In your manuscript you state that 4 your findings provide a molecular mechanism for linking 5 genital talcum powder use to increased ovarian cancer 6 risk? 7 A. Yes. 8 Q. And does that statement relate to the pathogenesis of 9 ovarian cancer? 10 A. Yes. 11 Q. Does pathogenesis refer to the molecular mechanism that 12 results in the development of a disease? 13 A. Yes. 14 Q. Also, in relation to your manuscript, has your 15 manuscript been peer reviewed and accepted for 16 publication? 17 A. Yes. 18 Q. Is the use of immortalized cells in laboratory research 19 generally accepted in your field? 20 A. Yes. 21 MR. HEGARTY: Objection, form. 22 BY MS. O'DELL: 23 Q. Is it widely accepted? 24 MR. HEGARTY: Objection, form. 25 THE WITNESS: Yes.</p>
<p style="text-align: right;">Page 323</p> <p>1 MR. HEGARTY: I'm sorry, we're not getting 2 realtime. 3 MS. O'DELL: Let's go off the record. Do you 4 need that or can we move on? 5 MR. HEGARTY: No, I need it. I just wanted 6 to see what he just said, and I can't, I obviously 7 can't see it so -- 8 MS. O'DELL: Off the record. 9 THE VIDEOGRAPHER: Going off the record at 10 7:03 p.m. 11 (An off-the-record discussion was held.) 12 THE VIDEOGRAPHER: We're back on the record 13 at 7:05 p.m. 14 BY MS. O'DELL: 15 Q. You may continue, Doctor? 16 A. Yes. So the Page 12, the middle paragraph, I would 17 like to delete references 4575 from the whole 18 paragraph, they don't belong there. 19 Q. Okay. 20 A. That's it. 21 Q. Anything else? Okay. Doctor, do in vitro models 22 reliably predict the pathogenicity of potentially 23 harmful particulates or other carcinogens in humans? 24 MR. HEGARTY: Objection, form. 25 THE WITNESS: Yes.</p>	<p style="text-align: right;">Page 325</p> <p>1 BY MS. O'DELL: 2 Q. Is it a generally accepted practice for researchers in 3 your field to correlate findings from immortalized 4 cells to in vivo application in humans? 5 A. Yes. 6 Q. In terms of the studies that you have conducted on 7 talc, you mentioned that you use multiple types -- 8 multiple lines of each type of cell; do you recall 9 that? 10 A. Yes. 11 Q. How many lines of or types of ovarian cells did you 12 use? 13 A. Three different ovarian cancer cell lines and three 14 different normal cell lines. 15 Q. And what's the reason for doing that? 16 A. The reason is to get a rebox finding to show that it is 17 not repeated three times but the finding is reproduced 18 from three different normal or three different ovarian. 19 Q. And could another scientist with your expertise in and 20 background in research, could they replicate the 21 studies that you've conducted? 22 A. Yes. 23 Q. In terms of the outcomes for oxidative stress and 24 inflammation that you saw demonstrated in your studies, 25 are there any alternative explanations for those</p>

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<p style="text-align: right;">Page 326</p> <p>1 results?</p> <p>2 MR. HEGARTY: Objection, form.</p> <p>3 THE WITNESS: That talcum powder induces</p> <p>4 inflammation that leads to increased risk of ovarian</p> <p>5 cancer.</p> <p>6 BY MS. O'DELL:</p> <p>7 Q. Are there any other alternative explanations other than</p> <p>8 the presence of talc treating a cell?</p> <p>9 A. This is a direct experiment showing isolated effect.</p> <p>10 Q. Based on your academic training and years of experience</p> <p>11 studying ovarian cancer, does the cause and effect</p> <p>12 observed in your studies make sense?</p> <p>13 MR. HEGARTY: Objection, form.</p> <p>14 THE WITNESS: It does.</p> <p>15 BY MS. O'DELL:</p> <p>16 Q. In terms of the particular data that you evaluated, I</p> <p>17 want to ask you to take a look at I think it was Bates</p> <p>18 Number Page 11 of Exhibit 1, and you were asked some</p> <p>19 questions about occasions when you averaged two</p> <p>20 findings?</p> <p>21 A. Outliers.</p> <p>22 Q. Yes. So address the outliers --</p> <p>23 A. Yeah, so what I forgot to say that when I was asked</p> <p>24 by -- this whole statistics, I did not touch. This was</p> <p>25 done by a professional, by a statistician, and the</p>	<p style="text-align: right;">Page 328</p> <p>1 RE-EXAMINATION BY MR. HEGARTY:</p> <p>2 Q. Doctor, in connection with your work in this</p> <p>3 litigation, did the lawyers for Plaintiff provide you</p> <p>4 with any medical or scientific literature?</p> <p>5 A. No.</p> <p>6 Q. So none of the materials we marked as Exhibit Number 11</p> <p>7 were provided by Counsel for Plaintiffs?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: Yeah, this was copied and</p> <p>10 provided by them, the references I made.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. In connection with you -- strike that. In connection</p> <p>13 with any other testing you have done involving cell</p> <p>14 cultures, have you ever served as an expert witness or</p> <p>15 a consultant in litigation involving the same topic of</p> <p>16 those experiments?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: I never served, as I stated, as</p> <p>19 an expert witness in any litigation.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. In connection with any experimental testing you've done</p> <p>22 involving cell cultures, have you ever served as a paid</p> <p>23 expert for plaintiffs lawyers on the same topic for</p> <p>24 which you were doing those experiments?</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 327</p> <p>1 results, his finding is in the section in the notebook.</p> <p>2 He determined everything.</p> <p>3 Q. Would you have published your results even if they had</p> <p>4 shown there was no biological effect?</p> <p>5 MR. HEGARTY: Objection, form.</p> <p>6 THE WITNESS: Of course.</p> <p>7 BY MS. O'DELL:</p> <p>8 Q. Is it a standard cell culture technique generally</p> <p>9 accepted in your field to split the cell culture right</p> <p>10 after the cells have -- (coughing in room) -- in a</p> <p>11 24-hour period?</p> <p>12 A. It is.</p> <p>13 Q. Is it a standard cell culture technique that's</p> <p>14 generally accepted in your field to start experiments</p> <p>15 right after splitting the cells?</p> <p>16 A. Cells have to reach confluency and then you split them,</p> <p>17 yes.</p> <p>18 Q. And it's generally accepted to begin your experiments</p> <p>19 right after that point?</p> <p>20 A. Correct.</p> <p>21 MS. O'DELL: Nothing further.</p> <p>22 How long was that?</p> <p>23 THE VIDEOGRAPHER: 14 minutes.</p> <p>24 MR. HEGARTY: Give me a second.</p> <p>25</p>	<p style="text-align: right;">Page 329</p> <p>1 THE WITNESS: Have I been hired by and paid</p> <p>2 for by another? I'm sorry --</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Other lawyers at the same time you were doing cell</p> <p>5 culture tests involving the same topic that you were</p> <p>6 consulting with them on.</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: No.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. You said in response to counsel's question that when</p> <p>11 you used the word marginal, you meant marked. What</p> <p>12 is -- where is a written definition for marked?</p> <p>13 A. Marked.</p> <p>14 Q. I think I said that, but where is a published standard</p> <p>15 for what marked means?</p> <p>16 A. This is marked is to me, but we can go the</p> <p>17 statistically significance. To me, when you have an</p> <p>18 increase of 1 versus 6 fold, that's a marked increase.</p> <p>19 Q. Is there a written standard for what constitutes a</p> <p>20 marked increase?</p> <p>21 A. No.</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. When I asked you not long ago if you had any revisions</p> <p>25 to your expert report, you answered no. Do you recall</p>

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<p style="text-align: right;">Page 330</p> <p>1 telling me that?</p> <p>2 MS. O'DELL: I don't recall the question</p> <p>3 being asked.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. I did ask. I asked you, Doctor, didn't I, if you had</p> <p>6 any -- if you needed to revise in any way your report.</p> <p>7 Do you recall me asking that?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: Probably I forgot that those</p> <p>10 references need to be done.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. When did this revelation come to you?</p> <p>13 A. I mean I don't --</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: I'm not sure, we've been</p> <p>16 through many, many, many questions, so I don't really</p> <p>17 remember be accurately.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Well, I asked that you question about --</p> <p>20 A. Make you did, I'm not denying, maybe you did, but I'm</p> <p>21 saying there are too many things that we're covering</p> <p>22 today in very small time.</p> <p>23 Q. Well, did you discover the need to make those revisions</p> <p>24 before today?</p> <p>25 A. Yes, they actually they were marked in my -- with my</p>	<p style="text-align: right;">Page 332</p> <p>1 A. What's the name of the lady I met today --</p> <p>2 MS. O'DELL: Michelle.</p> <p>3 THE WITNESS: Michelle, I just met her today.</p> <p>4 Sorry, I'm not good at names.</p> <p>5 MS. O'DELL: Alastair.</p> <p>6 THE WITNESS: And Alastair, we met today.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. You testified a moment ago that an in vitro model</p> <p>9 reliably predicts that, I think, pathogenesis of</p> <p>10 potentially harmful particles and other carcinogens --</p> <p>11 let me back up and find that testimony -- you said</p> <p>12 do -- you agreed with the question that in vitro models</p> <p>13 reliably predict the pathogenesis of potentially</p> <p>14 harmful particulates or other carcinogens in humans.</p> <p>15 Do you recall agreeing with that statement?</p> <p>16 A. Yes.</p> <p>17 Q. What data does it take for an in vitro model to</p> <p>18 reliably predict the carcinogenicity of a particle?</p> <p>19 A. What data?</p> <p>20 Q. Is it your testimony that in vitro models by themselves</p> <p>21 reliably predict the carcinogenicity of a particle to a</p> <p>22 human?</p> <p>23 A. Yes.</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: They do.</p>
<p style="text-align: right;">Page 331</p> <p>1 handwriting, this is my handwriting, they were marked</p> <p>2 with my handwriting.</p> <p>3 Q. When did you make those handwritten marks?</p> <p>4 A. Last night, I was reviewing this, and I -- what I</p> <p>5 understood maybe your question as if I want to make</p> <p>6 something to the text, but this is like probably the</p> <p>7 end notes without the references.</p> <p>8 Q. Did you meet with counsel for Plaintiffs yesterday?</p> <p>9 A. Did I meet with -- yes, I did.</p> <p>10 Q. For how long?</p> <p>11 A. I can't remember, three, four hours, five hours, I</p> <p>12 don't know.</p> <p>13 Q. From when to when?</p> <p>14 A. When was it, 10 maybe to 2, 3.</p> <p>15 Q. Who did you meet with?</p> <p>16 A. The three -- Leigh, Margaret, John, right, and who</p> <p>17 else -- I think that's it right, I don't remember,</p> <p>18 Leigh, Margaret, John, and Dan.</p> <p>19 Q. At any point in time during your consultation with</p> <p>20 Plaintiff's Counsel, have you met with any other</p> <p>21 lawyers that you've not identified here today?</p> <p>22 A. Have I met at any point?</p> <p>23 Q. At any point.</p> <p>24 A. I met Allison, right?</p> <p>25 Q. Any others who we haven't talked about?</p>	<p style="text-align: right;">Page 333</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Cite for me an instance when a carcinogen has been</p> <p>3 identified in humans based solely on an in vitro model.</p> <p>4 A. I can't remember.</p> <p>5 Q. When have you ever classified a substance as a</p> <p>6 carcinogen based on the result in an in vitro model?</p> <p>7 A. In vitro model is a good predictor to determine whether</p> <p>8 a substance is carcinogenic or not, if the same effect</p> <p>9 is replicated in vivo.</p> <p>10 Q. You did not replicate your results in an in vivo model,</p> <p>11 correct?</p> <p>12 A. Not yet.</p> <p>13 Q. You were asked with regard to your experimental results</p> <p>14 whether there was any other alternative explanation for</p> <p>15 the results. What did you do to rule out alternative</p> <p>16 explanations for the results that you found in your</p> <p>17 testing?</p> <p>18 A. Because treatment without talc did not induce it, we're</p> <p>19 doing a comparison, very simple comparison with and</p> <p>20 without, and with did this, without, this didn't do.</p> <p>21 Q. You claim that your test results show that talc</p> <p>22 increases the risk of ovarian cancer. How did you show</p> <p>23 by your test results that talc increases the risk --</p> <p>24 I'm sorry -- yeah, increases the risk of ovarian</p> <p>25 cancer?</p>

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<p style="text-align: right;">Page 334</p> <p>1 A. One more time, please.</p> <p>2 Q. How do you remember test results show that talc</p> <p>3 increases the risk of ovarian cancer?</p> <p>4 A. By showing that the treatment with talcum powder</p> <p>5 induces the same oxidative oxidant and anti-oxidant</p> <p>6 profile that we observe in epithelial ovarian cancer</p> <p>7 cells.</p> <p>8 Q. But no study has shown those results in women using</p> <p>9 cosmetic talc, correct?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: So you're saying there's no</p> <p>12 studies out there showing woman using the talc powder</p> <p>13 have increased any of these markers?</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Correct.</p> <p>16 A. I think you asked me the same question before.</p> <p>17 Q. Let me ask it a different way, if you -- I already</p> <p>18 asked you the same question. How do you go from your</p> <p>19 test results to concluding there's an increased risk of</p> <p>20 cancer with applying talc to the body?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: Again, as I stated, the</p> <p>23 treatment of ovarian cancer cells, three different</p> <p>24 ovarian cancer cell lines and three different normal</p> <p>25 cells with talcum powder induces a profile of oxidative</p>	<p style="text-align: right;">Page 336</p> <p>1 I don't understand what you're trying to do, seriously.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Well, have you ever reported finding a pro-oxidative or</p> <p>4 an anti-oxidative state in normal ovarian cells?</p> <p>5 MS. O'DELL: Object to the form.</p> <p>6 THE WITNESS: As compared to what?</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. As compared to nothing.</p> <p>9 A. How you not compare to nothing?</p> <p>10 Q. Right.</p> <p>11 A. So we comparing ovarian cancer to normal cells.</p> <p>12 Q. My question is simply in normal cells, have you ever</p> <p>13 found pro-oxidative or anti-oxidative state?</p> <p>14 A. We found -- okay, maybe I know what you want me to say.</p> <p>15 So there are the players, the key oxidants and key</p> <p>16 anti-oxidants, they are expressed in all cells</p> <p>17 including normal. Now, the amount of -- the degree of</p> <p>18 expression, that what gets screwed up and altered when</p> <p>19 you develop -- you start -- cells start developing that</p> <p>20 oncogenesis phenotype.</p> <p>21 Q. I need to leave Mr. Klatt a minute or two. You</p> <p>22 mentioned that you would still have published your</p> <p>23 article if you found no biologic effect. Do you recall</p> <p>24 answering that question?</p> <p>25 A. Correct.</p>
<p style="text-align: right;">Page 335</p> <p>1 stress that we in our lab have extensively published</p> <p>2 and characterized for ovarian cancer cells.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. You characterized that state in ovarian cancer cells,</p> <p>5 correct?</p> <p>6 MS. O'DELL: I'm sorry --</p> <p>7 THE WITNESS: State?</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. Well, the pro-oxidant and anti-oxidant state, you've</p> <p>10 characterized that to exist in ovarian cancer cells,</p> <p>11 correct?</p> <p>12 A. We characterized that there is an enhanced pro-oxidant</p> <p>13 state in -- that manifest in ovarian cancer cells, yes.</p> <p>14 Q. You've not done any studies showing a pro-oxidant or</p> <p>15 decreased anti-oxidant state in normal ovarian cancer</p> <p>16 cells, correct?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: Normal ovarian cancer?</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Yes. I'm sorry -- you have not shown a pro-oxidative</p> <p>21 or anti-oxidative state in normal ovarian cells?</p> <p>22 A. In response to what?</p> <p>23 Q. In response to anything.</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: That's a very vague question.</p>	<p style="text-align: right;">Page 337</p> <p>1 Q. Is it your belief that anyone would publish your paper</p> <p>2 if you showed no biologic effect?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: Anyone not me, you talking</p> <p>5 about me?</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Yes, any publisher.</p> <p>8 A. That it would be published, yes, I would consider this</p> <p>9 a very positive and very negative, same thing.</p> <p>10 Q. But do you think a journal would publish --</p> <p>11 A. Absolutely, it's a finding.</p> <p>12 Q. What is that based on?</p> <p>13 A. It's a finding.</p> <p>14 Q. Have you ever approached a journal and had them publish</p> <p>15 an article on a negative finding?</p> <p>16 A. I don't know what you call negative.</p> <p>17 Q. Well, showing no biologic --</p> <p>18 A. That's not negative, that's a huge finding.</p> <p>19 Q. Okay. All right.</p> <p>20 You have questions, Mike? Go ahead.</p> <p>21 RE-EXAMINATION BY MR. KLATT:</p> <p>22 Q. Dr. Saed, are you aware that a plaintiff's expert named</p> <p>23 John Godlesky has tested dozens of women's ovarian,</p> <p>24 reproductive, and peritoneal tissue, and found many,</p> <p>25 many nontalc particles, foreign particles in that</p>

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<p style="text-align: right;">Page 338</p> <p>1 tissue; are you aware of that?</p> <p>2 A. No.</p> <p>3 Q. If you tested those other foreign particles that aren't</p> <p>4 talc in the same test that you tested talc, could you</p> <p>5 get the same results?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: I didn't test them.</p> <p>8 BY MR. KLATT:</p> <p>9 Q. But is it possible that if you tested them, you could</p> <p>10 get the same results?</p> <p>11 A. If I didn't test them, I will not give you an answer.</p> <p>12 Q. I'm sorry?</p> <p>13 A. I did not test them.</p> <p>14 Q. So you have no idea whether any other foreign particle</p> <p>15 other than talc would result in the same findings you</p> <p>16 found for talc, correct?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 BY MR. KLATT:</p> <p>19 Q. Because you haven't done the test.</p> <p>20 A. When I test, I will tell you.</p> <p>21 Q. So you can't give us any information on what any other</p> <p>22 particles other than talc would do under the tests that</p> <p>23 you -- let me finish -- the tests that you submitted</p> <p>24 talc to, correct?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 340</p> <p>1 many questions as I can in 20 seconds. You're the</p> <p>2 first expert to reach the conclusions that you have in</p> <p>3 your report, is that correct?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: That were looking at the</p> <p>6 molecular mechanism and molecular effect of talcum</p> <p>7 powder?</p> <p>8 BY MR. LOCKE:</p> <p>9 Q. Right.</p> <p>10 A. I wasn't the first one.</p> <p>11 Q. Who did it before?</p> <p>12 A. Was Shukla and there was the -- what was the other guy</p> <p>13 name, I can't remember names, but there were two or</p> <p>14 three papers that look at molecular mechanisms,</p> <p>15 molecular effects.</p> <p>16 Q. Okay.</p> <p>17 MS. O'DELL: I'm sorry, time's up.</p> <p>18 MR. LOCKE: I'm going to still object to not</p> <p>19 being able to ask a couple quick questions here.</p> <p>20 MS. O'DELL: Tom, I'm sorry, I mean this</p> <p>21 is between --</p> <p>22 MR. LOCKE: You're cutting me off.</p> <p>23 MS. O'DELL: I've tried to be very</p> <p>24 accommodating, but this is between you and your</p> <p>25 co-counsel.</p>
<p style="text-align: right;">Page 339</p> <p>1 THE WITNESS: I only can give you information</p> <p>2 to the experiments that I did and --</p> <p>3 BY MR. KLATT:</p> <p>4 Q. And you didn't do any tests on any foreign particles</p> <p>5 other than talc, correct?</p> <p>6 A. Correct.</p> <p>7 Q. And has all your testing on talc been paid for by the</p> <p>8 Beasley Allen firm?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: My time?</p> <p>11 BY MR. KLATT:</p> <p>12 Q. Well, the testing, yeah, the time that you spent</p> <p>13 testing talc.</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: No, testing is not -- what are</p> <p>16 you trying to -- we already discussed this. Time, they</p> <p>17 paid for my time for consultation, I paid for the</p> <p>18 expenses from the lab. We already talked about that.</p> <p>19 MR. KLATT: Okay. Anybody else?</p> <p>20 MR. LOCKE: Yeah. Are you finished?</p> <p>21 MR. KLATT: Yes.</p> <p>22 EXAMINATION BY MR. LOCKE:</p> <p>23 Q. I just want to clarify for you, Doctor --</p> <p>24 MS. O'DELL: You've got 20 seconds.</p> <p>25 MR. LOCKE: Okay, well, I'm going to ask as</p>	<p style="text-align: right;">Page 341</p> <p>1 MR. LOCKE: No, it's really not.</p> <p>2 MS. O'DELL: Yes, it is, it is.</p> <p>3 MR. LOCKE: Okay. We'll be back with this</p> <p>4 witness.</p> <p>5 MR. HEGARTY: Do you have anything further?</p> <p>6 MS. O'DELL: I have nothing further.</p> <p>7 MR. HEGARTY: I just want to put on the</p> <p>8 record several document requests, and I certainly don't</p> <p>9 expect you to agree to them right now.</p> <p>10 We would like copies of Dr. Saed's prior</p> <p>11 drafts of his manuscript; copies of any correspondence</p> <p>12 with OB-GYN Oncology and its reviewers, whether it's in</p> <p>13 his possession or maintained on a website; any cover</p> <p>14 letters accompanying submissions of the manuscript to</p> <p>15 either OB-GYN Oncology or Reproductive Sciences; all</p> <p>16 communications with Dr. Saed, between Dr. Saed and</p> <p>17 Beasley Allen and other plaintiffs lawyers with regard</p> <p>18 to his manuscript; and the budget that Dr. Saed</p> <p>19 prepared for his manuscript; as well as all accounting</p> <p>20 documents, invoices, or other original documents that</p> <p>21 memorialize the expenses, costs, et cetera, hours</p> <p>22 worked on the manuscript that we -- that are reported</p> <p>23 in Exhibit Number 5.</p> <p>24 MS. O'DELL: You're referring to the budget</p> <p>25 officer at Wayne State?</p>

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<p style="text-align: center;">Page 342</p> <p>1 MR. HEGARTY: Correct, and the documents that</p> <p>2 Sharon Pepe used to put together the numbers that are</p> <p>3 reported in that exhibit. And those are at least the</p> <p>4 document requests that I can think of right now, but we</p> <p>5 reserve the right to go back and look at the transcript</p> <p>6 to see if there are any additional requests, and we</p> <p>7 will make them in a timely manner.</p> <p>8 MS. O'DELL: We will be happy to meet and</p> <p>9 confer on all of those items, some of which we might</p> <p>10 work an agreement out, some of which we might need some</p> <p>11 assistance by the Court.</p> <p>12 THE VIDEOGRAPHER: This concludes the</p> <p>13 deposition. We're going off the record at 7:29 p.m.</p> <p>14 (The deposition was concluded at 7:29 p.m.)</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 -----</p> <p>2 E R R A T A</p> <p>3 -----</p> <p>3 PAGE LINE CHANGE</p> <p>4 _____</p> <p>5 REASON: _____</p> <p>6 _____</p> <p>7 REASON: _____</p> <p>8 _____</p> <p>9 REASON: _____</p> <p>10 _____</p> <p>11 REASON: _____</p> <p>12 _____</p> <p>13 REASON: _____</p> <p>14 _____</p> <p>15 REASON: _____</p> <p>16 _____</p> <p>17 REASON: _____</p> <p>18 _____</p> <p>19 REASON: _____</p> <p>20 _____</p> <p>21 REASON: _____</p> <p>22 _____</p> <p>23 REASON: _____</p> <p>24 _____</p> <p>25 REASON: _____</p>
<p style="text-align: center;">Page 343</p> <p>1 CERTIFICATE OF NOTARY</p> <p>2</p> <p>3 STATE OF MICHIGAN)</p> <p>4) SS</p> <p>5 COUNTY OF OAKLAND)</p> <p>6 I, Laurel A. Frogner, Certified Shorthand</p> <p>7 Reporter, a Notary Public in and for the above county</p> <p>8 and state, do hereby certify that the above deposition</p> <p>9 was taken before me at the time and place hereinbefore</p> <p>10 set forth; that the witness was by me first duly sworn</p> <p>11 to testify to the truth, and nothing but the truth,</p> <p>12 that the foregoing questions asked and answers made by</p> <p>13 the witness were duly recorded by me stenographically</p> <p>14 and reduced to computer transcription; that this is a</p> <p>15 true, full and correct transcript of my stenographic</p> <p>16 notes so taken; and that I am not related to, nor of</p> <p>17 counsel to any party, nor interested in the event of</p> <p>18 this cause.</p> <p>19</p> <p>20</p> <p>21 Laurel A. Frogner, CSR-2495, RMR, CRR</p> <p>22 Notary Public,</p> <p>23 Oakland County, Michigan</p> <p>24 My Commission expires: 4-22-2022</p> <p>25</p>	<p>1 ACKNOWLEDGMENT OF DEPONENT</p> <p>2</p> <p>3 I, _____, do</p> <p>4 hereby certify that I have read the</p> <p>5 foregoing pages, and that the same</p> <p>6 is a correct transcription of the answers</p> <p>7 given by me to the questions therein</p> <p>8 propounded, except for the corrections or</p> <p>9 changes in form or substance, if any,</p> <p>10 noted in the attached Errata Sheet.</p> <p>11</p> <p>12 _____</p> <p>13 Ghassan Saed, Ph.D. DATE</p> <p>14</p> <p>15 Subscribed and sworn</p> <p>16 to before me this</p> <p>17 _____ day of _____, 20____.</p> <p>18 My commission expires: _____</p> <p>19 _____</p> <p>20 Notary Public</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>

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Exhibit E-2

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE DISTRICT OF NEW JERSEY

3
4 IN RE: JOHNSON & JOHNSON TALCUM
5 POWDER PRODUCTS MARKETING, SALES
6 PRACTICES, AND PRODUCTS LIABILITY
7 LITIGATION

8 MDL NO. 16-2738 (FLW) (LGH)

9
10 _____/

11 THIS DOCUMENT RELATES TO

12 ALL CASES VOLUME II

13 _____/

14

15

16

17 The Videotaped Deposition of GHASSAN SAED, Ph.D.,
18 Taken at 1 Park Avenue,
19 2nd Floor Conference Room,
20 Detroit, Michigan,
21 Commencing at 8:30 a.m.,
22 Thursday, February 14, 2019,
23 Before Jennifer L. Ward, CSR-3717.

24

25

<p style="text-align: right;">Page 347</p> <p>1 APPEARANCES:</p> <p>2</p> <p>3 P. LEIGH O'DELL, ESQ. and</p> <p>4 MARGARET M. THOMPSON, M.D., J.D.</p> <p>5 Beasley Allen Law Firm</p> <p>6 218 Commerce Street</p> <p>7 Montgomery, Alabama 36103</p> <p>8 (334) 269-2343</p> <p>9 leigh.odell@beasleyallen.com</p> <p>10 Margaret.Thompson@BeasleyAllen.com</p> <p>11 Appearing on behalf of Plaintiffs.</p> <p>12</p> <p>13 DANIEL R. LAPINSKI, ESQ.</p> <p>14 Wilentz, Goldman & Spitzer, P.A.</p> <p>15 90 Woodbridge Center Drive</p> <p>16 Suite 900</p> <p>17 Woodbridge, New Jersey 07095</p> <p>18 (732) 855-6066</p> <p>19 dlapinski@wilentz.com</p> <p>20 Appearing on behalf of Plaintiffs.</p> <p>21</p> <p>22</p> <p>23 (Appearances continued on Page 346.)</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 349</p> <p>1 APPEARANCES: (Continued)</p> <p>2</p> <p>3 JAMES W. MIZGALA, ESQ.</p> <p>4 Tucker Ellis</p> <p>5 233 South Wacker Drive</p> <p>6 Chicago, Illinois 60606</p> <p>7 (312) 624-6300</p> <p>8 James.mizgala@tuckerellis.com</p> <p>9 Appearing on behalf of Defendant PTI.</p> <p>10</p> <p>11 THOMAS T. LOCKE, ESQ.</p> <p>12 Seyfarth Shaw, LLP</p> <p>13 975 F Street, N.W.</p> <p>14 Washington, D.C. 20004</p> <p>15 (202) 463-2400</p> <p>16 tlocke@seyfarth.com</p> <p>17 Appearing on behalf of Defendant PCPC.</p> <p>18</p> <p>19 ALSO PRESENT:</p> <p>20 Jeff Gudme, Videographer</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 348</p> <p>1 APPEARANCES: (Continued)</p> <p>2</p> <p>3 MARK C. HEGARTY, ESQ.</p> <p>4 Shook, Hardy & Bacon, LLP</p> <p>5 2555 Grand Boulevard</p> <p>6 Kansas City, Missouri 64108</p> <p>7 (816) 474-6550</p> <p>8 mhegarty@shb.com</p> <p>9 Appearing on behalf of Defendant Johnson &</p> <p>10 Johnson.</p> <p>11</p> <p>12 GEOFFREY M. WYATT, ESQ.</p> <p>13 Skadden, Arps, Slate, Meagher & Flom, LLP</p> <p>14 1440 New York Avenue N.W.</p> <p>15 Washington, D.C. 20005</p> <p>16 (202) 371-7008</p> <p>17 geoffrey.wyatt@skadden.com</p> <p>18 Appearing on behalf of Defendant Johnson &</p> <p>19 Johnson.</p> <p>20</p> <p>21</p> <p>22</p> <p>23 (Appearances continued on Page 347.)</p> <p>24</p> <p>25</p>	<p style="text-align: right;">Page 350</p> <p>1 INDEX TO EXAMINATIONS</p> <p>2</p> <p>3 WITNESS PAGE</p> <p>4 GHASSAN SAED, Ph.D.</p> <p>5</p> <p>6 EXAMINATION BY MR. HEGARTY (Continuing) 359</p> <p>7 EXAMINATION BY MS. O'DELL 549</p> <p>8 REEXAMINATION BY MR. HEGARTY 557</p> <p>9 EXAMINATION BY MR. LOCKE 564</p> <p>10</p> <p>11 INDEX TO EXHIBITS</p> <p>12</p> <p>13</p> <p>14 EXHIBIT PAGE</p> <p>15</p> <p>16 EXHIBIT 22</p> <p>17 Invoice 361</p> <p>18</p> <p>19 EXHIBIT 23</p> <p>20 Copy of Pages From Lab Notebook 362</p> <p>21</p> <p>22 EXHIBIT 24</p> <p>23 Lab Notebook 396</p> <p>24</p> <p>25 (Index to Exhibits continued on Page 349.)</p>

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<p>1 INDEX TO EXHIBITS</p> <p>2</p> <p>3 EXHIBIT PAGE</p> <p>4</p> <p>5 EXHIBIT 24</p> <p>6 Preliminary Study (Previously Marked)</p> <p>7</p> <p>8 EXHIBIT 1</p> <p>9 Lab Notebook for the Data Reported</p> <p>10 in Manuscript</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 just put a statement on the record. Today's date is</p> <p>2 February the 14th, 2019.</p> <p>3 Yesterday, Imerys Talc America filed</p> <p>4 bankruptcy. Imerys Talc America has been a principal</p> <p>5 Defendant in this litigation, and their interests are</p> <p>6 inextricably intertwined with Johnson & Johnson</p> <p>7 Defendants and others. There's a stay on all matters,</p> <p>8 as we understand it, for matters related to Imerys.</p> <p>9 We were here in Detroit yesterday</p> <p>10 preparing, were ready to proceed. We were ready</p> <p>11 yesterday to proceed with Dr. Saed. We alerted to the</p> <p>12 court to the stay and asked the court's guidance as to</p> <p>13 whether the deposition should proceed, in light of the</p> <p>14 fact that Imerys is not present today and not</p> <p>15 represented. The court directed us to proceed.</p> <p>16 Former counsel for Imerys,</p> <p>17 Mark Silver, represented to the court that he could</p> <p>18 weigh Imerys' rights as to the continuation of the</p> <p>19 deposition. So in light of the court's order, and in</p> <p>20 light of Mark's Silver's representation, we'll proceed</p> <p>21 today, but any possibility the deposition will be</p> <p>22 reopened as to Imerys, we believe is now foreclosed.</p> <p>23 MR. HEGARTY: On behalf of</p> <p>24 Johnson & Johnson Defendants, we refer to the</p> <p>25 correspondence by Ms. Sharko of yesterday,</p>

Ghassan Saed, Ph.D.

<p style="text-align: right;">Page 359</p> <p>1 February 13th, for Johnson & Johnson's position with 2 regard to the Imerys filing in today's deposition. 3 MR. LOCKE: We join in that. 4 MR. HEGARTY: Okay. Ready? I don't 5 know if you need to reswear in the witness. Okay. 6 GHASSAN SAED, Ph.D., 7 having first been duly sworn, was examined and 8 testified on his oath as follows: 9 EXAMINATION BY MR. HEGARTY: 10 Q. Good morning, Dr. Saed. 11 A. Good morning. 12 Q. Did you review any documents to prepare to 13 testify here today? 14 A. Maybe my report. 15 Q. Did you review any other documents besides 16 your report to prepare to testify today? 17 A. Anything specific, no. 18 Q. Did you talk to anyone outside of 19 Plaintiffs' counsel to prepare to testify today? 20 A. No. 21 Q. Did you talk with any of the -- of the -- of 22 your co-authors on your manuscript or who were involved 23 in preparing the lab notebooks about either your 24 deposition last month or your deposition today? 25 A. Anything specific? Like talk about what?</p>	<p style="text-align: right;">Page 361</p> <p>1 we submitted to SGO. 2 Q. Anyone else? 3 A. No. 4 Q. Have you prepared any additional invoices of 5 your work -- and let me back up. We were provided with 6 a copy of an additional invoice of your work late last 7 night. I'm going to mark as Exhibit Number 22 a copy 8 of that invoice. 9 DEPOSITION EXHIBIT 22 10 Invoice 11 WAS MARKED BY THE REPORTER 12 FOR IDENTIFICATION 13 BY MR. HEGARTY: 14 Q. Is that the -- the most recent invoice that 15 you prepared for purposes of your work on this 16 litigation? 17 A. Yes. 18 Q. Has that invoice been paid? 19 A. Yes. 20 Q. You mentioned when we were together last 21 month that you were asked to write an editorial to an 22 open access journal on talc and oxidative stress. Have 23 you started writing that editorial? 24 A. Not yet. 25 Q. Did you or anyone else add to or change</p>
<p style="text-align: right;">Page 360</p> <p>1 Q. Talk about what was discussed at your 2 deposition -- 3 A. No. 4 Q. -- the subject of your deposition? 5 A. With my lab worker, yes. I was telling them 6 about the whiteout in the notebook. 7 Q. What lab worker? 8 A. My research assistant. 9 Q. What's their name? 10 A. Rong. We call her Florie, so -- 11 Q. Did you talk with anyone else outside of 12 Plaintiffs' counsel about your deposition last month or 13 your deposition today besides Flora? 14 A. No. 15 Q. Since your last deposition, have you spoken 16 with anyone outside of Plaintiffs' counsel about your 17 talc testing or your manuscripts, other than your lab 18 personnel? In other words, anyone outside of 19 Wayne State or outside of our lab personnel, have you 20 talked with them about the testing that you did or your 21 manuscript? 22 A. The testing that I did, I didn't. About the 23 manuscript, I talked to SRI. 24 Q. Anyone else? 25 A. And I talked to regarding the abstracts that</p>	<p style="text-align: right;">Page 362</p> <p>1 anything in the lab notebooks produced at your last 2 deposition, Exhibits 2 and 3? 3 A. No. 4 Q. We received prior to your deposition a 5 number of additional documents that you provided to 6 counsel for Plaintiffs that I'd like to walk through. 7 The first document we received I'm going to mark as 8 Exhibit 23, which is a copy of pages from one of your 9 lab notebooks that were produced last month. 10 DEPOSITION EXHIBIT 23 11 Copy of Pages From Lab Notebook 12 WAS MARKED BY THE REPORTER 13 FOR IDENTIFICATION 14 BY MR. HEGARTY: 15 Q. Is that correct? 16 A. This is -- which one is this? 17 Q. I believe this would be the pilot study of 18 the preliminary trial that you did to, as you said, 19 tune up the technique for your testing for your 20 manuscript. 21 A. Exhibit 3? 22 MS. O'DELL: Object to the form. 23 BY MR. HEGARTY: 24 Q. It should be -- it's the first -- 25 MS. O'DELL: Dr. Saed --</p>

<p style="text-align: right;">Page 363</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. -- 30 pages or so of Exhibit 3, correct?</p> <p>3 MS. O'DELL: Object to the form. I</p> <p>4 think you're referring to Exhibit 2.</p> <p>5 MR. HEGARTY: Exhibit 2, yes.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. You should be at Exhibit 2.</p> <p>8 A. Exhibit 2?</p> <p>9 Q. Yes.</p> <p>10 A. The first 29 pages.</p> <p>11 Q. The first 29 pages; is that correct?</p> <p>12 A. Oh, this one here?</p> <p>13 Q. Of Exhibit 2.</p> <p>14 A. Okay.</p> <p>15 Q. Is that right?</p> <p>16 A. Yes. Yes. I know now.</p> <p>17 Q. As you said last month, those pages</p> <p>18 represent a preliminary trial or a pilot study for the</p> <p>19 testing that you ultimately did that's described in</p> <p>20 your manuscript and your expert report, correct?</p> <p>21 A. This was an attempt to -- yes.</p> <p>22 Q. Okay. And again, those pages, Exhibit 23,</p> <p>23 are from original notebook number two, correct,</p> <p>24 Exhibit Number 2?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 365</p> <p>1 Q. Did you --</p> <p>2 A. It's very --</p> <p>3 Q. I'm sorry.</p> <p>4 A. It's a very labile molecule.</p> <p>5 Q. Did you conclude that the 500 microgram per</p> <p>6 milliliter and the thousand microgram per liter dosages</p> <p>7 were toxic to the cells?</p> <p>8 A. Not necessarily. We just lost the RNA.</p> <p>9 From our practice working with RNA, this is a common</p> <p>10 problem working with RNA. RNA is a very labile</p> <p>11 molecule, and it's susceptible to degradation, and so</p> <p>12 the RNA degraded, and we did not continue, and we</p> <p>13 started this other experiment.</p> <p>14 Q. If you turn over to page 24 --</p> <p>15 A. 24.</p> <p>16 Q. -- of that part of the notebook.</p> <p>17 A. Um-hum.</p> <p>18 Q. You have tables --</p> <p>19 A. Yes.</p> <p>20 Q. -- that report data for a thousand.</p> <p>21 A. Correct.</p> <p>22 Q. How is that possible?</p> <p>23 A. Okay. So this experiment is from part one.</p> <p>24 This is the poster that we submitted, which is this.</p> <p>25 Exhibit 3, this data belonged to the first -- first</p>
<p style="text-align: right;">Page 364</p> <p>1 Q. If you look in Exhibit 23 at page two.</p> <p>2 A. Yes. This page?</p> <p>3 Q. Yes. There are 500 microliter and 1,000</p> <p>4 microliter treatments?</p> <p>5 A. Micrograms.</p> <p>6 Q. Micrograms, I'm sorry. There -- there are</p> <p>7 500 -- let me start over. There are 500 and 1,000</p> <p>8 micrograms per milliliter of treatments shown on that</p> <p>9 page. Where is the data for the 500 microgram per</p> <p>10 milliliter tests?</p> <p>11 A. So this experiment, we started to treat</p> <p>12 cells with two doses, 500 and a thousand. And this</p> <p>13 experiment here we did not continue because the RNA was</p> <p>14 degraded, and we couldn't do any further testing with</p> <p>15 it. So that's why we stopped here, and we started a</p> <p>16 new one on -- on -- on page -- the actual manuscript</p> <p>17 work.</p> <p>18 So those doses were not -- the</p> <p>19 cells were not good, they were not healthy, and they</p> <p>20 didn't tolerate this treatment, and this is why we</p> <p>21 think we lost them, because they didn't tolerate this</p> <p>22 treatment. We're not sure why.</p> <p>23 Q. That was going to be my follow-up question.</p> <p>24 Why, from your standpoint, was the RNA degraded?</p> <p>25 A. Oh, RNA could degrade for many reasons.</p>	<p style="text-align: right;">Page 366</p> <p>1 trial experiment that we did. It's misplaced here.</p> <p>2 That's not the right place for it. It's right here.</p> <p>3 MS. O'DELL: Dr. Saed, you're</p> <p>4 pointing to a page in Exhibit 3?</p> <p>5 THE WITNESS: This is Exhibit --</p> <p>6 Exhibit 3. That's the poster we submitted at SRI, it's</p> <p>7 right here, and this data exactly is there. It's not</p> <p>8 supposed to be here.</p> <p>9 MS. O'DELL: What -- what page in</p> <p>10 Exhibit 3 is the poster?</p> <p>11 THE WITNESS: It's 62 and 63. This</p> <p>12 here, right here.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Okay. We'll come back to that.</p> <p>15 A. Exact same data.</p> <p>16 Q. Okay.</p> <p>17 A. So yes, we tried -- we tried a thousand, and</p> <p>18 we tried the 500, that was our initial work, because we</p> <p>19 always -- when we do treatment like this, we always</p> <p>20 start with the high dose, and then we titrate it down</p> <p>21 to lower dose.</p> <p>22 Q. If we stay on page two of Exhibit 23, or</p> <p>23 your notebook two --</p> <p>24 A. Can you just show me the page, please?</p> <p>25 Q. Same page we were looking at.</p>

<p style="text-align: right;">Page 367</p> <p>1 A. Okay.</p> <p>2 Q. You show on this page using baby powder and</p> <p>3 talc. Do you see that?</p> <p>4 A. Where?</p> <p>5 Q. If you look in the experiments, you list</p> <p>6 500 micrograms per milliliter of talc. You also list</p> <p>7 500 micrograms per milliliter of baby powder that you</p> <p>8 designate as BP. Do you see that?</p> <p>9 A. Yes.</p> <p>10 Q. So in this experiment, did you use Johnson</p> <p>11 baby powder and another manufacturer's talc?</p> <p>12 A. Yes, Fisher.</p> <p>13 Q. I'm sorry?</p> <p>14 A. Fisher.</p> <p>15 Q. In fact, you show pictures of both --</p> <p>16 A. Correct.</p> <p>17 Q. -- on the page before?</p> <p>18 A. Correct.</p> <p>19 Q. Is there a breakdown of data in this</p> <p>20 notebook between the baby powder and the talc?</p> <p>21 A. We did not continue this experiment because</p> <p>22 we didn't get RNA, so that's why the first part of</p> <p>23 the -- of the experiment was done with Fisher, and the</p> <p>24 manuscript was done with baby powder. We did not</p> <p>25 continue that because we didn't get RNA. And this is</p>	<p style="text-align: right;">Page 369</p> <p>1 A. No.</p> <p>2 Q. -- 1,000 microgram per milliliters doses?</p> <p>3 A. Okay.</p> <p>4 MS. O'DELL: Just object to form.</p> <p>5 Let him finish.</p> <p>6 THE WITNESS: Okay.</p> <p>7 MS. O'DELL: And then as you're</p> <p>8 going back and forth, Dr. Saed, in talking about</p> <p>9 specific pages, just make sure you're really clear --</p> <p>10 THE WITNESS: Yeah.</p> <p>11 MS. O'DELL: -- what you're</p> <p>12 referring to so it will -- it will come through on the</p> <p>13 transcript.</p> <p>14 THE WITNESS: Okay. So again, I</p> <p>15 forgot, what was the question?</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Did you generate RNA extraction data for the</p> <p>18 500 and a thousand microgram per milliliter samples?</p> <p>19 A. No, nothing -- not from this study.</p> <p>20 Q. In looking at pages six and seven, for what</p> <p>21 samples was this RNA extraction data created? What do</p> <p>22 they correspond to?</p> <p>23 A. Here. The ID is right here.</p> <p>24 MS. O'DELL: What page, sir?</p> <p>25 THE WITNESS: Page two.</p>
<p style="text-align: right;">Page 368</p> <p>1 very common.</p> <p>2 Q. On pages six and seven, you show RNA</p> <p>3 extraction data?</p> <p>4 A. Yes.</p> <p>5 Q. Did you not generate any RNA extraction data</p> <p>6 for the 500 and the thousand milliliter per microgram</p> <p>7 tests?</p> <p>8 A. Okay. So see the ID number?</p> <p>9 Q. Yes.</p> <p>10 A. All the ID number, and then the ID number</p> <p>11 here? It says exactly which one we isolated RNA from,</p> <p>12 so they should correspond. If we isolated RNA, it will</p> <p>13 be from here. But the problem is, the RNA we isolated</p> <p>14 was not -- the quality was not good, so we had to redo</p> <p>15 it.</p> <p>16 Q. And none of the numbers that you list for</p> <p>17 the 500 and the thousand --</p> <p>18 A. Um-hum.</p> <p>19 Q. -- are listed on the RNA data on six and</p> <p>20 seven?</p> <p>21 A. Yes.</p> <p>22 MS. O'DELL: Object.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. So did you actually generate RNA data for</p> <p>25 the 500 and --</p>	<p style="text-align: right;">Page 370</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Well, you said --</p> <p>3 A. Page seven, you have 267, 269, 273, yes?</p> <p>4 Q. Yes.</p> <p>5 A. And then on the next page, you have -- it</p> <p>6 has -- everything has a code next to it. So they're</p> <p>7 all labeled. See that?</p> <p>8 Q. Yes. But if you look, Doctor, there is --</p> <p>9 for example, 278, on page two, a sample for 278 --</p> <p>10 A. Um-hum.</p> <p>11 Q. -- and I don't see RNA extraction data for</p> <p>12 278 on six or seven.</p> <p>13 A. 278. I just want to make sure before I</p> <p>14 answer you. Okay.</p> <p>15 Q. Why is that?</p> <p>16 A. We -- probably we lost it.</p> <p>17 Q. Do you know?</p> <p>18 A. I don't know. What I know from this</p> <p>19 experiment, the RNA extraction did not work as well as</p> <p>20 we would like to.</p> <p>21 Q. But the data on six and seven do correspond</p> <p>22 with some of the samples on page two, correct?</p> <p>23 A. Some worked, some didn't.</p> <p>24 Q. Did you run any enzyme tests, any PCR or</p> <p>25 ELISA tests on the 500 or 1,000 samples?</p>

<p style="text-align: right;">Page 371</p> <p>1 A. From these data?</p> <p>2 Q. Yes.</p> <p>3 A. No.</p> <p>4 Q. Do you still have somewhere, though -- or</p> <p>5 strike that. With regard to the sample 278 we talked</p> <p>6 about, did you even run the RNA extraction data?</p> <p>7 MS. O'DELL: Objection, form. I'm</p> <p>8 not sure I understood. Do you mind repeating your</p> <p>9 question?</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Well, you how a sample. We looked at 278,</p> <p>12 correct?</p> <p>13 A. (Nodding).</p> <p>14 Q. And you're nodding your head. And on six</p> <p>15 and seven there is no RNA extraction data for 278. Did</p> <p>16 you even try to run the 278 sample?</p> <p>17 A. I need to clarify something. There is</p> <p>18 something missing here, okay. So these are the samples</p> <p>19 the treatment of cells, okay. You treat the cells, and</p> <p>20 then after the treatment, as indicated here, 24 hours,</p> <p>21 48 hours, 72 hours with the different doses, 500,</p> <p>22 1,000, with the -- with the -- with the powder, then</p> <p>23 you -- after that, you extract RNA.</p> <p>24 Q. Right.</p> <p>25 A. What I said is some of the extraction</p>	<p style="text-align: right;">Page 373</p> <p>1 23. Did you run data for SOD-3, CAT, GST, etcetera?</p> <p>2 A. Okay. Let me answer this, please. So this</p> <p>3 part here, you see how it's scribbled a lot and</p> <p>4 scratched and all that stuff?</p> <p>5 MR. LAPINSKI: What page are you</p> <p>6 referring to, Doctor?</p> <p>7 THE WITNESS: 20. 20 you have the</p> <p>8 same page, right?</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. 20, yes.</p> <p>11 A. Okay. This part here, we just started a</p> <p>12 fresh one here. It's exactly the same one. We started</p> <p>13 to explain everything in details.</p> <p>14 Q. You're jumping over to the main tests?</p> <p>15 A. Yes, which this is exactly the same. It's</p> <p>16 just different -- the way we organized it here better,</p> <p>17 okay. We didn't cross anything, we didn't do anything,</p> <p>18 I just scrambled this, and then we started the whole</p> <p>19 new book from here, explaining everything in details</p> <p>20 with the sample ID. Let me tell you --</p> <p>21 MS. O'DELL: At what page --</p> <p>22 THE WITNESS: Let me answer the</p> <p>23 question.</p> <p>24 MS. O'DELL: At what page is that?</p> <p>25 THE WITNESS: Oh. From here on,</p>
<p style="text-align: right;">Page 372</p> <p>1 worked, some didn't, and even the one that they worked,</p> <p>2 the RNA was degraded.</p> <p>3 Q. How do you know if an extraction works or it</p> <p>4 doesn't?</p> <p>5 A. Because when you look at the -- you're</p> <p>6 trying to -- how do I know if it worked or not? If you</p> <p>7 look at the ratio of 260 to 280, that's very low, and</p> <p>8 the yield was very low.</p> <p>9 Q. You're looking at the ratio of 260 to 280?</p> <p>10 A. Yes. And the -- the yield, how much we got</p> <p>11 out of the cells was very low to do anything with it.</p> <p>12 Q. But why didn't you -- why don't you have a</p> <p>13 line for 278?</p> <p>14 A. 278? I don't know. Maybe we -- maybe we --</p> <p>15 we lost it completely. I don't know. I don't</p> <p>16 remember.</p> <p>17 Q. If you turn over to page 20 of this same</p> <p>18 part of the notebook we're looking at, there you report</p> <p>19 treatments with 5, 20 and 100 micrograms per</p> <p>20 milliliter, correct?</p> <p>21 A. Correct.</p> <p>22 Q. Where is the enzyme data for these tests?</p> <p>23 In other words, you show --</p> <p>24 A. Oh, okay.</p> <p>25 Q. -- RNA data on the next couple pages, 22 and</p>	<p style="text-align: right;">Page 374</p> <p>1 from --</p> <p>2 MS. O'DELL: Page?</p> <p>3 THE WITNESS: From page 30 on.</p> <p>4 MS. O'DELL: Okay.</p> <p>5 THE WITNESS: Let me explain. Let</p> <p>6 me answer your question about the enzymes. So now we</p> <p>7 did -- these are the cells. We treated the cells,</p> <p>8 okay, with the 5, 20 and a hundred, okay. And then we</p> <p>9 took some of the media, we took some of the cells for</p> <p>10 RNA extraction to do PCR, we took some from the cells</p> <p>11 for -- to isolate protein to do ELISA, and some for DNA</p> <p>12 to do the genetic testing.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Okay.</p> <p>15 A. So it's the same exact sample ID, same exact</p> <p>16 lot, because that's the way -- the proper way to do</p> <p>17 these kind of experiments. You have to start from one</p> <p>18 cell line -- from one lot of cells, sorry, and then go</p> <p>19 from there. So same cells, we isolate RNA, isolate for</p> <p>20 PCR, protein for enzyme testing we call it, it's ELISA,</p> <p>21 and DNA for genetic testing.</p> <p>22 Q. If you look at page 21 of the same part of</p> <p>23 the notebook we've been talking about --</p> <p>24 A. Yes.</p> <p>25 Q. -- there are tests at the bottom dated</p>

<p style="text-align: right;">Page 375</p> <p>1 February 26th, 2018 with 5, 20 and a hundred and zero 2 that are numbered 3 -- 383, 384, 385 and 386. Do you 3 see that? 4 A. Um-hum. 5 Q. If you turn to the next two pages -- 6 A. 383. 7 Q. -- those pages are dated 2-15 -- 2-5 and 8 2-16 and list data -- RNA extraction data for 383, 9 384, 385 and 386, but you're showing the seeding 10 of cells on the 26th. How can you have data 11 generated on the 5th and 16th for cells you seeded on 12 the 26th? 13 A. This is 2-26. That's 283, 284, 260, yeah. 14 This could be from a different lot. So because we -- 15 we get -- we always treat cells and get more cells if 16 we need RNA. So this could be from a different lot. 17 So this is normal ovarian epithelial cells, but they're 18 very hard to grow. You need to grow more of them to 19 get the same amount of RNA. 20 Q. So where are then the treatments of 383, 21 384, 385 and 386 that are reported on 22 and 23? 22 A. This one here? 23 Q. Yes. You report data on 2-5 and 2-16 on 24 pages 22 and 23 for samples 383 through 386, but where 25 are the --</p>	<p style="text-align: right;">Page 377</p> <p>1 A. 383, 384, 385, that answers your question, 2 right? They are treated with the same. This is just 3 additional, extra -- 4 Q. Okay. 5 A. -- to get more cells. 6 Q. So where -- where are the tests for the ones 7 that are reported on 2-26? 8 A. We didn't need to do it. We have -- we have 9 done here. We did it. We're done. 10 Q. Well, why did you do it again on 2-26? 11 A. We need more. We always need more. 12 Q. But did you test those? 13 A. The new ones that we did? 14 Q. Correct. 15 A. No. 16 Q. Why not? 17 A. We didn't need to. We had -- we had enough 18 RNA, and we proceeded. 19 Q. Well, you had enough RNA as reported on 2-5 20 and 2-16. Why then did you decide on 2-26 to do the 21 cells again? 22 A. Hold on one second, please. 23 MS. O'DELL: Object to form. 24 THE WITNESS: I'm not understanding 25 what you're really asking me now.</p>
<p style="text-align: right;">Page 376</p> <p>1 A. Yeah. 2 Q. -- seeding -- where is the seeding data and 3 the data for those four samples? 4 A. There is no seeding data. This is just to 5 get more of it. We have retreated the same time with 6 the other cells, but this is an additional treatment to 7 get more cells -- 8 Q. Understood. 9 A. -- more RNA. But we didn't use this for 10 isolating the RNA from here. 11 Q. But where did 383 to 386 come from? 12 A. They were treated with the same cells. 13 Q. But you -- 14 MS. O'DELL: On what page? 15 BY MR. HEGARTY: 16 Q. The page you're pointing to, page 20, has 17 crossed out 383 to 386, and it covers different cells 18 on that page -- 19 A. No -- 20 Q. Let me finish -- SKOV A2780. 21 A. Can I answer? 22 Q. Sure. 23 A. Okay. If you look at page 20, see normal 24 ovarian? 25 Q. Yes.</p>	<p style="text-align: right;">Page 378</p> <p>1 BY MR. HEGARTY: 2 Q. Well, you -- 3 A. Where are you looking? 4 Q. Let me finish my question. You said you ran 5 the tests for normal epithelial cells, as you pointed 6 to on page 20, 383 to 386, that you say correspond to 7 the data on those two pages, on pages 22 and 23, 8 correct? 9 A. Yes. 10 Q. Those pages are -- have dates on them of the 11 data runs of 2-5 and 2-16, correct? 12 A. Correct. 13 Q. So you've got data that you can use? 14 A. Um-hum. 15 Q. Then why did you need to run additional 16 cells on 2-26, if you already had data that you could 17 use? 18 A. I answered. 19 MS. O'DELL: Object to the form. 20 BY MR. HEGARTY: 21 Q. Tell me again. 22 A. Okay. Normal ovarian epithelial cells, they 23 are very slow-growing cells, and every time we work 24 with them, we -- because cancer cells grow so fast, 25 these grow very slow, so every time we do experiments</p>

<p style="text-align: right;">Page 379</p> <p>1 with normal epithelial cells, we back up. We have --</p> <p>2 we wake up some more cells just in case something</p> <p>3 happens, so we can use them. Does that make sense?</p> <p>4 Q. Yes. And going back to page 20, why,</p> <p>5 though, do you have numbers 383 through 386, but then</p> <p>6 you also have crossed through data with regard to the</p> <p>7 5, 20 and a hundred? Doesn't that appear that these</p> <p>8 test results weren't done --</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. -- or these tests weren't done?</p> <p>12 A. I answered you.</p> <p>13 Q. Why do you have lines through the 5, 20 and</p> <p>14 100?</p> <p>15 A. Here?</p> <p>16 Q. Here.</p> <p>17 A. Okay.</p> <p>18 MR. LAPINSKI: When you say here,</p> <p>19 you're referring to page 20?</p> <p>20 THE WITNESS: On page 20. So they</p> <p>21 were missed, -- they were -- see the numbers are</p> <p>22 different? We crossed them. We give them the right --</p> <p>23 the corresponding correct numbers.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Okay.</p>	<p style="text-align: right;">Page 381</p> <p>1 that other proteins and media may be interfering</p> <p>2 tri-lysate. What does that mean?</p> <p>3 A. This is an ELISA assay to determine CA-125</p> <p>4 levels. So when you determine -- CA-125 is a protein</p> <p>5 that is made by the cell inside the cells, and also</p> <p>6 secreted outside the cells.</p> <p>7 So when -- we try to do to determine</p> <p>8 in the media first how much we have there in the media,</p> <p>9 and if -- also we wanted to determine how much they are</p> <p>10 in the lysate inside the cell. That's what I meant by</p> <p>11 this. Lysate means inside the cell. Media means</p> <p>12 outside the cell.</p> <p>13 Q. When it says other the proteins and media</p> <p>14 may be interfering, what is that referring to?</p> <p>15 A. May be interfering, maybe. We don't know.</p> <p>16 So we're just assuming that, so that's why we run both.</p> <p>17 Q. You report on this same page using a</p> <p>18 thousand micrograms per milliliter of talc in this</p> <p>19 experiment --</p> <p>20 A. Correct.</p> <p>21 Q. -- is that correct?</p> <p>22 A. Correct.</p> <p>23 Q. But again, you reported, again, we noted a</p> <p>24 moment ago that a thousand was killing the cells,</p> <p>25 correct?</p>
<p style="text-align: right;">Page 380</p> <p>1 A. And this is my handwriting. I crossed that.</p> <p>2 Q. So you do have -- do you have other</p> <p>3 handwriting in this part of the notebook of yours?</p> <p>4 A. This is Nicole, and this is me.</p> <p>5 Q. You're on the right side of page 20?</p> <p>6 A. Right side, this is me. I crossed this, and</p> <p>7 I put the numbers.</p> <p>8 Q. And you're pointing on the -- to the ride</p> <p>9 side of page 20?</p> <p>10 A. Correct. The 383, 384, 385, 386 where it</p> <p>11 says okay, that's me. Yeah. So my answer about these</p> <p>12 cells, that the -- because they're slow growing,</p> <p>13 they're very, very slow growing, everybody knows this,</p> <p>14 we -- we always -- when we do experiments with them, we</p> <p>15 back up. So we add -- we seed more just in case, so we</p> <p>16 don't have to wait another three, four weeks.</p> <p>17 Q. Would you look at page 13 of that same part</p> <p>18 of the notebook, please?</p> <p>19 A. Show me, please.</p> <p>20 Q. Dated 1-12-18 at the top.</p> <p>21 A. Yeah.</p> <p>22 Q. It says at the top, protein levels for</p> <p>23 CA-125 assay, correct?</p> <p>24 A. Yes.</p> <p>25 Q. At the very bottom of that notebook, it says</p>	<p style="text-align: right;">Page 382</p> <p>1 A. No.</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: No.</p> <p>4 MS. O'DELL: That's not what he</p> <p>5 said.</p> <p>6 THE WITNESS: That's not what I</p> <p>7 said. Thank you.</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. What did you say?</p> <p>10 A. I said we could not get RNA from the</p> <p>11 treatment of the thousand. We got media in cells, the</p> <p>12 lysate. There's something -- I need to explain this.</p> <p>13 Do you want me to?</p> <p>14 Q. Which part do you want to explain?</p> <p>15 A. The mixup between the lysate, the media, RNA</p> <p>16 versus protein versus enzymes. There's like really a</p> <p>17 mixup here.</p> <p>18 Q. Really a what?</p> <p>19 A. Mixup. Mixup. We're mixing it.</p> <p>20 Q. When you say mixup, what do you mean?</p> <p>21 A. It means you refer to treatment with a</p> <p>22 thousand, with -- for RNA to the same treatment with a</p> <p>23 thousand for the media collected from cells.</p> <p>24 Q. Okay. We'll -- we'll come back --</p> <p>25 A. Okay.</p>

<p style="text-align: right;">Page 383</p> <p>1 Q. -- to your explanation if we need to.</p> <p>2 A. If you need to.</p> <p>3 Q. If you look over on page 19 of this same</p> <p>4 part of the notebook. Tell me when you're there,</p> <p>5 page 19.</p> <p>6 A. Oh.</p> <p>7 Q. I think you're on page 20.</p> <p>8 A. Sorry. Dated January 29?</p> <p>9 Q. At the top.</p> <p>10 A. Yes, thank you.</p> <p>11 Q. At the bottom, there's a date of January 31,</p> <p>12 2018. It says, the presence of 1,000 micrograms per</p> <p>13 milliliter is physically killing the cells. We need to</p> <p>14 decrease dose. First of all, whose handwriting is</p> <p>15 that?</p> <p>16 A. That's Nicole.</p> <p>17 Q. So I just asked you a moment ago about your</p> <p>18 use of a thousand micrograms per milliliter for the</p> <p>19 CA-125 test results. So how can you get valid test</p> <p>20 results for CA-125 when -- for a thousand micrograms</p> <p>21 per milliliters of -- of dose, when the dose is</p> <p>22 physically killing the cells?</p> <p>23 A. Yes. So it's physically killing the</p> <p>24 cells. It doesn't mean it's killing all cells in the</p> <p>25 media. It's killing part of the cells, not the whole</p>	<p style="text-align: right;">Page 385</p> <p>1 cells, so that's we went and titrated down to the</p> <p>2 lowest dose, which is 5, 20 and a hundred. And for</p> <p>3 CA-125, I believe we did that.</p> <p>4 Q. Nicole wrote on 1-31-18 on that page 19 that</p> <p>5 we need to decrease dose. Why did she say we need to</p> <p>6 decrease dose, if you know?</p> <p>7 A. Because it is physically killing some of the</p> <p>8 cells or most of the cells.</p> <p>9 Q. Is it your testimony that the data for</p> <p>10 CA-125 run with a thousand micrograms per milliliter is</p> <p>11 still valid data?</p> <p>12 A. Yes.</p> <p>13 MS. O'DELL: Object to form.</p> <p>14 THE WITNESS: Yes.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Even though the data came from tests where</p> <p>17 the dose was physically killing the cells?</p> <p>18 A. Yes, part of the cells.</p> <p>19 Q. How are you able to know that it was only</p> <p>20 part of the cells and not all of the cells?</p> <p>21 A. We can see it under the microscope. This is</p> <p>22 the exact same reason how she determined physically</p> <p>23 killing the cells. So you look at them.</p> <p>24 Q. If you look at the --</p> <p>25 A. And also, if I may add, we confirmed it with</p>
<p style="text-align: right;">Page 384</p> <p>1 cells. So we still got media, we still got protein out</p> <p>2 of it.</p> <p>3 Q. But how do you know that the -- the results</p> <p>4 of the tests are not affected by the toxicity of the</p> <p>5 dose to the cells?</p> <p>6 A. Good question.</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: Good question. That's</p> <p>9 why we repeated this in here.</p> <p>10 MS. O'DELL: Refer to the page.</p> <p>11 THE WITNESS: So we -- we -- this</p> <p>12 was just a pilot experiment, as I indicated, and that's</p> <p>13 why we repeated it in detail here. If you go to ELISA</p> <p>14 section here, and you can here under the ELISA section</p> <p>15 there's a CA-125 with the new doses, 5, 20 and a</p> <p>16 hundred. It's right here.</p> <p>17 MS. O'DELL: What pages are you</p> <p>18 referring to?</p> <p>19 THE WITNESS: I will tell you in one</p> <p>20 second. It is page 63. It's called CA-125 ELISA.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. I understand that you -- why did you go</p> <p>23 from -- why did you go from a thousand to a hundred?</p> <p>24 A. Because, as I told you, physically it was</p> <p>25 affecting the cells. So we don't want to stress the</p>	<p style="text-align: right;">Page 386</p> <p>1 the lower dose, and we got similar effects. So that's</p> <p>2 why we believe it is a valid data.</p> <p>3 Q. If you turn over to page 15 of that same</p> <p>4 part of the notebook, at the very bottom there's a</p> <p>5 statement that says, lysate protein measurements may be</p> <p>6 affected by talc. Whose handwriting is that?</p> <p>7 A. Nicole.</p> <p>8 Q. What does that mean?</p> <p>9 A. It means the yield of the protein, how much</p> <p>10 protein you get from cells isolated from talc. So when</p> <p>11 you treat cells with talc, the protein yield that you</p> <p>12 get, that's why we do a normalization, is affected</p> <p>13 because there is a differential expression of genes.</p> <p>14 Something is going on.</p> <p>15 Q. If you look at the very end of that first</p> <p>16 exhibit. It's page 24 of that -- of the part of the</p> <p>17 notebook we've been looking at, page 24.</p> <p>18 A. This is here. This belongs -- this is not</p> <p>19 right. This is here.</p> <p>20 Q. No, this is a -- we're look at something</p> <p>21 different.</p> <p>22 A. Oh, sorry.</p> <p>23 Q. Go to page 24 of the part of the notebook</p> <p>24 we've been looking at?</p> <p>25 A. 24. This here?</p>

<p style="text-align: right;">Page 387</p> <p>1 Q. Correct.</p> <p>2 A. Yeah, this is here.</p> <p>3 Q. Okay. You're saying the data that you're</p> <p>4 pointing to on 24 is in the --</p> <p>5 A. This --</p> <p>6 Q. -- poster?</p> <p>7 A. -- this mistakenly put here. It should be</p> <p>8 here. This is in the poster. It's exact identical</p> <p>9 data.</p> <p>10 MS. O'DELL: Just what you're saying</p> <p>11 that the data --</p> <p>12 THE WITNESS: 24 page here is 62, 63</p> <p>13 here.</p> <p>14 MS. O'DELL: Of Exhibit 3?</p> <p>15 THE WITNESS: Of Exhibit 3.</p> <p>16 MS. O'DELL: Okay.</p> <p>17 THE WITNESS: It's mistakenly put</p> <p>18 here.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Where is the data for the 20, 100 and a</p> <p>21 thousand for all of the charts that you have on the</p> <p>22 back?</p> <p>23 A. It's here. It's all here.</p> <p>24 Q. In which notebook?</p> <p>25 A. It's -- this is 3, and it starts from page</p>	<p style="text-align: right;">Page 389</p> <p>1 Q. Well, it says CDNA at the top of page 23.</p> <p>2 A. That's -- that's -- yeah, that's not -- CDNA</p> <p>3 was not done for this one.</p> <p>4 Q. That was going to be my next question. What</p> <p>5 data was -- what other tests were done with the samples</p> <p>6 that we talked through on page 20 of the 5, 20 and a</p> <p>7 hundred?</p> <p>8 A. Okay. PCR data, no PCR data. We haven't</p> <p>9 done anything PCR here from these data.</p> <p>10 Q. Did you do anything with those data?</p> <p>11 A. Those data, let's see. Those data are the</p> <p>12 same. I'm sorry. Sorry. I take that back. I</p> <p>13 misunderstood the question. Okay.</p> <p>14 MS. O'DELL: Why don't you repeat</p> <p>15 the question?</p> <p>16 THE WITNESS: Yeah, please, please,</p> <p>17 because I'm confused going back and forth, so sorry.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Well, I'm looking for --</p> <p>20 A. Sorry.</p> <p>21 Q. -- any other tests that you ran with these</p> <p>22 samples.</p> <p>23 A. What samples?</p> <p>24 Q. Samples --</p> <p>25 A. 356?</p>
<p style="text-align: right;">Page 388</p> <p>1 38 all the way down.</p> <p>2 Q. Why is the 5 microgram per milliliter data</p> <p>3 not reported?</p> <p>4 A. Oh. Okay, sorry. This is the first</p> <p>5 experiment we did long time ago. We did it with a</p> <p>6 hundred -- with 20, and a hundred, and a thousand.</p> <p>7 This is for the first experiment that we did, and we</p> <p>8 were actually surprised to see the effect. So that's</p> <p>9 the whole idea of this experiment. That's why we</p> <p>10 reported this.</p> <p>11 We didn't even look what goes up,</p> <p>12 what goes down. We -- we just -- the fact that there</p> <p>13 was a biological effect upon talc treatment was very</p> <p>14 intriguing to us. This was done September through</p> <p>15 October of 2017.</p> <p>16 Q. If we go -- if you look again, page 22</p> <p>17 and 23 from that same part of the notebook we've been</p> <p>18 looking at.</p> <p>19 MS. O'DELL: Exhibit 23.</p> <p>20 THE WITNESS: Here?</p> <p>21 MR. HEGARTY: Yes.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. There you list RNA data and CDNA data,</p> <p>24 correct?</p> <p>25 A. CDNA data?</p>	<p style="text-align: right;">Page 390</p> <p>1 Q. 5 through 20 -- 5, 20 and a hundred on page</p> <p>2 20.</p> <p>3 A. 356, 357, all that?</p> <p>4 Q. Correct.</p> <p>5 A. The whole manuscript is all about that. I</p> <p>6 was thinking of the other one, I'm sorry.</p> <p>7 Q. So the samples that you list in the first</p> <p>8 part of the notebook were carried over to the next part</p> <p>9 of the notebook?</p> <p>10 A. This is exactly the same as here. We just</p> <p>11 rewrote it to make it clear. That's -- I said that</p> <p>12 already. It's exact same treatment, exact same thing.</p> <p>13 MS. O'DELL: And you refer -- excuse</p> <p>14 me, I'm sorry. If he refers to the pages, so --</p> <p>15 THE WITNESS: On 20, page 20, the</p> <p>16 cell treatment and the ID number is carried over here,</p> <p>17 and clearly written in -- on page 32 for the record.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. In that poster, though, you don't report on</p> <p>20 any 5 microgram data, correct?</p> <p>21 A. Correct.</p> <p>22 Q. Why not?</p> <p>23 A. Because I told you, this was -- okay, one</p> <p>24 more time. This work was the initial experiment that</p> <p>25 we did to see if there is an effect of talcum powder on</p>

<p style="text-align: right;">Page 391</p> <p>1 cells.</p> <p>2 MS. O'DELL: And you referred to</p> <p>3 Exhibit 3, page --</p> <p>4 THE WITNESS: Yes. I don't know.</p> <p>5 MS. O'DELL: Yeah. This --</p> <p>6 MR. HEGARTY: Okay.</p> <p>7 THE WITNESS: You keep mixing me up,</p> <p>8 so --</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. All right. I think I'm following you now,</p> <p>11 okay.</p> <p>12 A. Okay.</p> <p>13 Q. On --</p> <p>14 MS. O'DELL: Excuse me. I'm sorry,</p> <p>15 Mark. Were you finished? So you were referring to</p> <p>16 exhibit --</p> <p>17 THE WITNESS: Yeah. So this -- this</p> <p>18 poster was done from the initial observation on this,</p> <p>19 all that's in Exhibit 3.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. Okay.</p> <p>22 A. Okay. And this is data dated from September</p> <p>23 to October, okay?</p> <p>24 MS. O'DELL: 2017.</p> <p>25 THE WITNESS: 2017, okay. At that</p>	<p style="text-align: right;">Page 393</p> <p>1 something called supernatant?</p> <p>2 A. Supernatant.</p> <p>3 Q. Supernatant. What is that?</p> <p>4 A. It's the media of the cells.</p> <p>5 Q. Why do you run tests on be the media?</p> <p>6 A. Because you want to see if there is an</p> <p>7 effect on -- which one is this? Oh, I'm sorry. Hold</p> <p>8 on one second. Supernatant.</p> <p>9 MS. O'DELL: I'm sorry. Just to</p> <p>10 clarify, Dr. Saed, you're looking at the 2017 poster?</p> <p>11 THE WITNESS: I'm sorry. Yeah,</p> <p>12 thank you for reminding me.</p> <p>13 MS. O'DELL: Are you asking -- I</p> <p>14 understood the question to correspond to the 2018</p> <p>15 experiments, but --</p> <p>16 THE WITNESS: Okay. Let me answer</p> <p>17 this. So supernatant is when you dissolve the talc</p> <p>18 powder with DMSO, the solvent, you have two phases,</p> <p>19 media, like soluble phase, and the talcum particles,</p> <p>20 correct. So we wanted to see if there is -- if there</p> <p>21 is an effect from the supernatant without the</p> <p>22 particles. That's all.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Did you see any effect?</p> <p>25 A. There is some effect.</p>
<p style="text-align: right;">Page 392</p> <p>1 time, we did 20, a hundred, and a thousand, at that</p> <p>2 time. And so now we repeated this in February of '18.</p> <p>3 MS. O'DELL: 2018?</p> <p>4 THE WITNESS: This is when -- 2018.</p> <p>5 And this is when we did the 5, the 20, and a hundred.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. You list in this poster results for a</p> <p>8 thousand micrograms per milliliter?</p> <p>9 A. Correct.</p> <p>10 Q. Again, how are you able to verify that</p> <p>11 that's valid data, when you reported in your study</p> <p>12 lab book that a thousand micrograms per milliliter was</p> <p>13 killing the cells?</p> <p>14 MS. O'DELL: Object to form.</p> <p>15 THE WITNESS: Okay. I just answered</p> <p>16 this.</p> <p>17 MS. O'DELL: Repeat your answer --</p> <p>18 THE WITNESS: Physically killing</p> <p>19 some cells, that doesn't mean you cannot get RNA, you</p> <p>20 cannot get to do the assay. That doesn't -- it's not</p> <p>21 the optimal condition, but you still can do the</p> <p>22 experiment, okay. And to confirm that, when we did it</p> <p>23 with the lower dose, we got the results.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. In the same chart we're looking at, you do</p>	<p style="text-align: right;">Page 394</p> <p>1 Q. What was the -- what was the reason for the</p> <p>2 effect?</p> <p>3 A. Because we could not fully isolate the</p> <p>4 particles from the supernatant. So that's why we</p> <p>5 believe the effect comes from the particles.</p> <p>6 Q. When you say the effect comes from the</p> <p>7 particles, what do you mean?</p> <p>8 A. The -- the talcum particles.</p> <p>9 Q. And what effect are you talking about?</p> <p>10 A. The effect we see here, the changing -- the</p> <p>11 changing oxidative stress markers, the effect that we</p> <p>12 observe in the -- that we report in the poster?</p> <p>13 MS. O'DELL: Just for the record,</p> <p>14 the poster as contained in Exhibit 3 at pages 60 --</p> <p>15 what are the pages in the notebook that are at issue?</p> <p>16 THE WITNESS: 38 to 68.</p> <p>17 MS. O'DELL: Okay. Thank you.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. If you look at the very first page, the</p> <p>20 index of the part of the notebook we've been looking</p> <p>21 at?</p> <p>22 A. This?</p> <p>23 Q. Exhibit 2.</p> <p>24 A. Yep.</p> <p>25 Q. Do you see in the middle of that page a date</p>

<p style="text-align: right;">Page 395</p> <p>1 of January 7, 2018 for protein extraction samples?</p> <p>2 A. Um-hum.</p> <p>3 Q. Do you see that?</p> <p>4 A. Yes.</p> <p>5 Q. Then if you turn over to page 20 of that</p> <p>6 same part of the notebook --</p> <p>7 A. Um-hum.</p> <p>8 Q. -- this shows that you're seeding the cells</p> <p>9 and treating the cells on February 1st, 2018. How can</p> <p>10 you do protein extraction on January 1st when you're</p> <p>11 not doing the tests until February 1st?</p> <p>12 MS. O'DELL: Exhibit 1.</p> <p>13 THE WITNESS: Let's see. 53. Where</p> <p>14 is 53. Okay. Yeah. Good question. So if you go to</p> <p>15 page -- it says here go to page 53, okay.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Right.</p> <p>18 A. And again, we're mixing up between two</p> <p>19 things, okay. I'm sorry, can I say it again?</p> <p>20 MS. O'DELL: Explain it in detail --</p> <p>21 THE WITNESS: Yeah, yeah.</p> <p>22 MS. O'DELL: -- so the record is</p> <p>23 clear, please.</p> <p>24 THE WITNESS: This -- this -- go to</p> <p>25 page 53, please.</p>	<p style="text-align: right;">Page 397</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. This was the notebook that you brought to</p> <p>3 the deposition the last time, correct?</p> <p>4 A. Correct.</p> <p>5 Q. You said this was your first study involving</p> <p>6 Fisher talc where you exposed three ovarian cell lines</p> <p>7 and macrophages of epithelial cells and presented the</p> <p>8 work for the poster to the SRI, correct?</p> <p>9 A. Yes. Just to clarify, macrophages and</p> <p>10 ovarian epithelial.</p> <p>11 Q. Do you see pages -- the first few pages of</p> <p>12 this part -- this part of the notebook, there are</p> <p>13 several dates that are whited out and written over. Do</p> <p>14 you see those dates?</p> <p>15 A. Where?</p> <p>16 Q. For example, on 9-26, the very first date,</p> <p>17 9-26-2017, there's whiteout there in the left-hand</p> <p>18 corner?</p> <p>19 A. Yeah.</p> <p>20 Q. Look over on the next -- the page before.</p> <p>21 A. (Gesturing).</p> <p>22 Q. Correct. You're pointing to -- what -- what</p> <p>23 page number is that at the bottom?</p> <p>24 A. 38.</p> <p>25 Q. There is a whiting out, and written over the</p>
<p style="text-align: right;">Page 396</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Okay, I'm there.</p> <p>3 A. Okay. This is for ELISA for protein</p> <p>4 extraction. That for MRNA. That's why we have -- the</p> <p>5 book is not in chronological order, and we label each</p> <p>6 section, and we left pages so we can write it, fill it</p> <p>7 in. That's why. You see different two assays. This</p> <p>8 is protein, ELISA enzymes, and this is RNA.</p> <p>9 Q. Okay.</p> <p>10 DEPOSITION EXHIBIT 24</p> <p>11 Lab Notebook</p> <p>12 WAS MARKED BY THE REPORTER</p> <p>13 FOR IDENTIFICATION</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. We're going to look at the second -- next</p> <p>16 notebook for a bit, Doctor. I'm marking as Exhibit 24</p> <p>17 a copy of the other notebook that we were provided,</p> <p>18 Number 3.</p> <p>19 MS. O'DELL: Exhibit 3?</p> <p>20 MR. HEGARTY: Exhibit 3, yeah.</p> <p>21 MS. O'DELL: What number did you</p> <p>22 mark the -- the new exhibit? Exhibit 24?</p> <p>23 THE WITNESS: 24.</p> <p>24 MS. O'DELL: Okay.</p> <p>25 THE WITNESS: This one.</p>	<p style="text-align: right;">Page 398</p> <p>1 whiteout is 26-2017. Do you see that?</p> <p>2 A. Yes.</p> <p>3 Q. Why is that?</p> <p>4 A. No idea.</p> <p>5 Q. Then if you look down, there's also a</p> <p>6 whiteout over 9 -- whiteout in 9-29-2017 is written</p> <p>7 over. Do you see that?</p> <p>8 MS. O'DELL: What page are you on</p> <p>9 there?</p> <p>10 THE WITNESS: Yes.</p> <p>11 MR. HEGARTY: We're on page 38.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Do you know, why is that whited out?</p> <p>14 A. No idea. A mistake.</p> <p>15 MS. O'DELL: And Doctor, if you can</p> <p>16 identify the wording under the whiteout, don't guess,</p> <p>17 but --</p> <p>18 THE WITNESS: Sometimes you can,</p> <p>19 sometimes you cannot. It says, for example, page 38,</p> <p>20 the whiteout says biologic.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. Can you --</p> <p>23 A. This is like procedure. It's like methods.</p> <p>24 It's not even data, nothing to do with data.</p> <p>25 Q. On the dates that we just talked about, can</p>

<p style="text-align: right;">Page 399</p> <p>1 you tell from the original notebook what -- what the 2 date was that or the dates were that were whited out? 3 A. I can't tell. 4 MS. O'DELL: Object to the form. 5 THE WITNESS: I cannot tell. 6 BY MR. HEGARTY: 7 Q. Okay. Turn over to page 51, please. 8 A. iNOS. 9 Q. Are you there, Doctor? 10 A. iNOS, yes. 11 MS. O'DELL: When you say iNOS -- 12 THE WITNESS: iNOS, the molecule. 13 MS. O'DELL: How do you spell that? 14 THE WITNESS: I, and then NOS, 15 N-O-S. 16 MS. O'DELL: Okay. 17 BY MR. HEGARTY: 18 Q. If you look under the -- in the table where 19 it says SKOV dash 3 cells? 20 A. Yes, SKOV. 21 Q. You're on the wrong page. 22 A. Oh, sorry. Yes. SKOV control. 23 Q. Yeah, there's a control for 20 micrograms 24 per milliliter talc, and then also a listed control for 25 100 microgram per milliliter talc. Do you see that?</p>	<p style="text-align: right;">Page 401</p> <p>1 A. For iNOS? 2 Q. Yes. 3 A. Yes, whatever is written here. It is 4 reported 20 control and a hundred control for this, and 5 you want to see if it's done for another molecule, like 6 GPX1, for example? 7 Q. No, not right now. 8 A. Okay. 9 Q. Not right now. You did not do the -- a 10 5 microgram per milliliter sample here? 11 A. Oh, my God. Okay. No, I did not. 12 Q. Okay. You're still doing a thousand 13 micrograms per milliliter test with this part -- this 14 test, correct? 15 A. I did 20, a hundred, and a thousand. 16 Q. Please go to page 53. 17 A. GPX? 18 Q. I'm sorry, go to page 52 first. 19 A. Still GPX. 20 Q. Are you at page 52? 21 A. Um-hum. 22 Q. It says, in the chart that has data at the 23 top, normal ovarian OV epithelial control for 20, then 24 it says 100. What does that mean? 25 A. So this is normal ovarian for a thousand,</p>
<p style="text-align: right;">Page 400</p> <p>1 A. Yes. 2 Q. Wasn't there only one control for each cell 3 line? 4 A. For this experiment? 5 Q. Yes. 6 A. No, there wasn't. 7 Q. You had one set of control cells for each 8 dose? 9 A. Correct. 10 Q. Does the notebook report the treating of the 11 controls for each of the cell lines? 12 A. What notebook? 13 Q. The notebook we're looking at. 14 A. Yeah. It says right there, 20 microgram 15 control, hundred microgram control, 20 microgram 16 treatment, hundred microgram treatment. 17 Q. Does it report the treatment of controls 18 anywhere besides in the -- in the chart? In other 19 words, is it reported elsewhere in the notebook? 20 A. I don't remember. 21 MS. O'DELL: For which finding? 22 THE WITNESS: I don't remember for 23 what month are you referring to. 24 BY MR. HEGARTY: 25 Q. I'm referring to the SKOV dash 3 cells.</p>	<p style="text-align: right;">Page 402</p> <p>1 normal -- oh. Yes, I think she did the control for 20 2 and a hundred at one time. 3 Q. How can you do a control for 20 and a 4 hundred at the same time? 5 A. Because they're very close doses, so we 6 don't -- as you just said to me, you really didn't need 7 to do more than one control, but because the doses are 8 big, there's a huge difference in the dose, like 9 between 20, a hundred, and a thousand, there's a huge 10 difference, that's why we have control for both. But 11 for 20 and a hundred, we found from here, from the 12 other previous studies that they -- we didn't need to 13 do it, so she didn't do it. 14 Q. But isn't there -- okay, I see. So you 15 think that for purposes of this test, that the control 16 for the 20 and the 100 was the same control, one 17 control for both of those? 18 A. Correct. Will serve for both, yes. 19 Q. Do you know which dose she applied to the 20 control? Was it 20 or a hundred? 21 A. No, the control, you don't apply those. 22 Q. Well, do you apply the DMSO? 23 A. Yes. 24 Q. At what volume? 25 A. Same volume like you use for treatment.</p>

<p style="text-align: right;">Page 403</p> <p>1 Q. I gotcha.</p> <p>2 A. Thank you.</p> <p>3 Q. Go to page 53 now, please.</p> <p>4 A. Okay.</p> <p>5 Q. If you go down to the table where you're</p> <p>6 reporting on A2780 cells --</p> <p>7 A. Yes.</p> <p>8 Q. -- particularly the 1,000 microgram per</p> <p>9 milliliter talc, do you see that part of the table?</p> <p>10 A. I do.</p> <p>11 Q. The p-value noted there is .291, correct?</p> <p>12 A. Yes, correct.</p> <p>13 Q. That's not statistically significant,</p> <p>14 correct?</p> <p>15 A. Correct.</p> <p>16 Q. That's for GPX1, right?</p> <p>17 A. Correct.</p> <p>18 Q. Go back to the -- then, your poster --</p> <p>19 A. Okay.</p> <p>20 Q. -- for this experiment.</p> <p>21 A. Okay. GP -- GPX1.</p> <p>22 Q. If you look at the GPX1 --</p> <p>23 A. A2780.</p> <p>24 Q. -- it's in the right hand -- on the</p> <p>25 right-hand side, the middle graph, correct?</p>	<p style="text-align: right;">Page 405</p> <p>1 that it is statistically significant, when the p-value</p> <p>2 from the data we're looking at is .291?</p> <p>3 A. So maybe the asterisk -- again, this -- this</p> <p>4 is PowerPoint, and the asterisk can be shifted easily,</p> <p>5 so if -- we're not hiding it. This is the data, .29.</p> <p>6 Anybody knows it's not statistically significant, and</p> <p>7 so maybe these asterisks were shifted or something. I</p> <p>8 cannot tell you, but the data is right here. The data</p> <p>9 is in front of you.</p> <p>10 Q. But the data is not included in your poster,</p> <p>11 correct?</p> <p>12 A. Correct.</p> <p>13 Q. So anyone looking at the poster would not</p> <p>14 have access to the data we're looking at on page 53,</p> <p>15 correct?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: They don't have the</p> <p>18 data, yes, but they can ask.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Turn over to page 55 of that part of the</p> <p>21 notebook, please.</p> <p>22 A. 55.</p> <p>23 Q. We're again looking at the data for SOD3,</p> <p>24 and in particular the A2780 cells. Do you see for the</p> <p>25 100 microgram and 1,000 microgram treatments that your</p>
<p style="text-align: right;">Page 404</p> <p>1 A. Yes.</p> <p>2 Q. For the 1,000 dose average for the A2780,</p> <p>3 don't you list that as being statistically significant?</p> <p>4 A. Let me look. So this -- which color would</p> <p>5 be this? That's the purple color. That's comparing --</p> <p>6 comparing to this purple color. Okay. So this is</p> <p>7 comparing it to the 20 dose. Yeah, you see -- okay.</p> <p>8 So this -- this --</p> <p>9 MS. O'DELL: What are you referring</p> <p>10 to?</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. The p-value?</p> <p>13 A. The p-value here is comparing the thousand</p> <p>14 to its control. The p-value here, if you see the</p> <p>15 asterisk, it's comparing it to the treatment, to the</p> <p>16 20 microgram treatment, I believe. I'm not sure.</p> <p>17 Q. But doesn't the --</p> <p>18 A. Yes.</p> <p>19 Q. -- description -- doesn't the description</p> <p>20 under the -- the graph say it's comparing to --</p> <p>21 A. Let me see.</p> <p>22 Q. -- to controls?</p> <p>23 A. Versus control, you're right, so yeah,</p> <p>24 that's statistically significant. That wasn't -- okay.</p> <p>25 Q. Why do you list in that -- in that graph</p>	<p style="text-align: right;">Page 406</p> <p>1 p-values are above .05? They're .1692 and .1029? Do</p> <p>2 you see that, Doctor?</p> <p>3 A. Yes.</p> <p>4 Q. And if you turn back to the poster and look</p> <p>5 at SOD3 on the left-hand side, the third graph down,</p> <p>6 for the 2780 for the hundred and the thousand -- I'm</p> <p>7 sorry, it's the fourth -- fourth graph down, for the</p> <p>8 hundred and the thousand, you're reporting those to be</p> <p>9 statistically significant at a p-value of less than</p> <p>10 .05, correct?</p> <p>11 MS. O'DELL: Do you need -- if you</p> <p>12 need to see that -- the poster in larger, if it's</p> <p>13 difficult to read, i -- f you can read it, fine, great.</p> <p>14 THE WITNESS: Yeah.</p> <p>15 MS. O'DELL: If you cannot, then</p> <p>16 I'll provide it to you electronically.</p> <p>17 THE WITNESS: What I am concerned</p> <p>18 about -- I have a concern here. So what I'm concerned</p> <p>19 about, that these asterisks were shifted, so -- but the</p> <p>20 data is what we go with. I'm not -- I'm not really</p> <p>21 sure. I mean, I wouldn't say significant if the data</p> <p>22 say it's not significant, okay.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. At least the -- on 55, page 55, it shows the</p> <p>25 data are not statistically significant, correct?</p>

<p style="text-align: right;">Page 407</p> <p>1 A. Not correct. Not all of them.</p> <p>2 Q. Well, I'm sorry. Fair point.</p> <p>3 A. Yeah.</p> <p>4 Q. The ones we looked at --</p> <p>5 A. Yes.</p> <p>6 Q. -- the 2780 for a hundred and the 2780 for a</p> <p>7 thousand are not statistically significant?</p> <p>8 A. For this specific mark, yes.</p> <p>9 Q. Correct, okay.</p> <p>10 A. Yeah. So I'm concerned about this maybe</p> <p>11 shifted or something. I don't know what the answer is.</p> <p>12 Q. The poster that we've been looking at, was</p> <p>13 this a poster that you presented at SRI?</p> <p>14 A. SRI.</p> <p>15 Q. The SRI meeting in March?</p> <p>16 A. March --</p> <p>17 MS. O'DELL: 2017?</p> <p>18 THE WITNESS: -- 2017?</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Yes.</p> <p>21 A. No.</p> <p>22 Q. March 2018?</p> <p>23 A. 2018.</p> <p>24 MS. O'DELL: 2018, excuse me.</p> <p>25 THE WITNESS: March 2018.</p>	<p style="text-align: right;">Page 409</p> <p>1 poster that we're looking at right now, and I don't</p> <p>2 know where it is.</p> <p>3 A. Okay.</p> <p>4 Q. The only abstract I could find for</p> <p>5 March 2018 to SRI was 25.</p> <p>6 A. That was the breaking -- late-breaking</p> <p>7 abstract, CA-125, but there is an abstract for this.</p> <p>8 Q. And -- okay. We'll come back once we look</p> <p>9 through your documents to see if we can find the</p> <p>10 abstract that corresponds to that.</p> <p>11 A. So when you say you didn't find it, you</p> <p>12 didn't find it online?</p> <p>13 Q. I did not find it in the documents that have</p> <p>14 been produced, or at least I -- I overlooked it. And</p> <p>15 we'll go through all the abstracts to make sure that</p> <p>16 I'm --</p> <p>17 MS. O'DELL: I think you --</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. -- incorrect or correct.</p> <p>20 MS. O'DELL: It was produced in the</p> <p>21 documents that were provided to you.</p> <p>22 MR. HEGARTY: Which one are you</p> <p>23 referring to that you think corresponds with that?</p> <p>24 MS. O'DELL: Let me ask Dr. Saed, is</p> <p>25 that the abstract that corresponds with the poster?</p>
<p style="text-align: right;">Page 408</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Was there an abstract that went along with</p> <p>3 that?</p> <p>4 A. I don't understand your question.</p> <p>5 Q. Well, you have a poster there, correct?</p> <p>6 A. Yes.</p> <p>7 Q. Was there an abstract that was published for</p> <p>8 the meeting that went along with the poster?</p> <p>9 A. Yeah. You submit an abstract first to the</p> <p>10 meeting, and then they accept it, and then they publish</p> <p>11 it, yes.</p> <p>12 DEPOSITION EXHIBIT 25</p> <p>13 Abstract for March 2018 SRI Meeting</p> <p>14 WAS MARKED BY THE REPORTER</p> <p>15 FOR IDENTIFICATION</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. I'm marking Exhibit 25, which was what we</p> <p>18 also looked at last time. Is Exhibit 25 the abstract</p> <p>19 for the March 2018 SRI meeting?</p> <p>20 A. Yeah, but that's for a different. That's</p> <p>21 for CA-125.</p> <p>22 Q. Exactly.</p> <p>23 A. Oh, you're done with this?</p> <p>24 Q. NO. I'm trying to find the -- I'm trying to</p> <p>25 find where the abstract is that you prepared for the</p>	<p style="text-align: right;">Page 410</p> <p>1 You might not --</p> <p>2 THE WITNESS: Talcum powder enhanced</p> <p>3 oxidase -- yes.</p> <p>4 MS. O'DELL: And it's the -- it was</p> <p>5 labeled Saed Lecture 2018A, Oxidative Stress.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. And I'll tell you the reason that I didn't</p> <p>8 connect this abstract with that poster is because this</p> <p>9 abstract describes cells treated for -- with 0, 200 and</p> <p>10 500.</p> <p>11 A. This abstract is from 0, 200 and 500. And</p> <p>12 this is 0, 200, 500. I don't remember. I don't</p> <p>13 remember this.</p> <p>14 MS. O'DELL: I'll take it back,</p> <p>15 Doctor, if it's not the same.</p> <p>16 THE WITNESS: Yeah, I don't -- I</p> <p>17 don't remember. It's different maybe. I don't know</p> <p>18 what it is.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. When we're finished walking through your</p> <p>21 documents --</p> <p>22 A. Yes.</p> <p>23 Q. -- we'll see if we came across an abstract</p> <p>24 that corresponds to that poster.</p> <p>25 A. Yeah.</p>

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<p>1 Q. Stay with this poster for a little bit</p> <p>2 longer.</p> <p>3 A. Oh.</p> <p>4 Q. Go back to it, please. Would you look at</p> <p>5 the Results section, please, Doctor?</p> <p>6 A. Of the abstract?</p> <p>7 Q. Of the poster.</p> <p>8 A. Sorry.</p> <p>9 Q. Do you see the results in the lower</p> <p>10 left-hand corner?</p> <p>11 A. The conclusion you're talking about?</p> <p>12 Q. No, the Results section?</p> <p>13 A. Oh, I'm sorry, yes, here.</p> <p>14 Q. The Results section says there was a marked</p> <p>15 increase in MRNA levels of the pro-oxidant enzymes iNOS</p> <p>16 and MPO in talc-treated ovarian cancer cell line</p> <p>17 macrophages in normal ovarian epithelial cells, all as</p> <p>18 compared to their controls. Then it cites the figure.</p> <p>19 A. Um-hum.</p> <p>20 Q. Additionally, there was a marked increase in</p> <p>21 the MRNA levels of the anti-oxidant enzymes CAT, SOD3,</p> <p>22 GSR, GPX1 and GSIP1, in talc-treated ovarian cancer</p> <p>23 treated cells in normal ovarian epithelial cells, as</p> <p>24 all compared to their controls, correct?</p> <p>25 A. That's what it says.</p>	<p>1 talcum powder. And we only did PCR here. This is very</p> <p>2 preliminary.</p> <p>3 Q. Okay.</p> <p>4 A. That's why we repeated -- this is why we</p> <p>5 repeated the whole study with the tri-purses (ph), and</p> <p>6 we extensively did the enzymes, the ELISAs, everything.</p> <p>7 Q. Do you have a copy of your manuscript there,</p> <p>8 Doctor, the one for Reproductive Sciences?</p> <p>9 A. Do I have a copy of that?</p> <p>10 Q. I'll show you. It's been marked previously</p> <p>11 as Exhibit 7. That's your manuscript to Reproductive</p> <p>12 Sciences, correct?</p> <p>13 MS. O'DELL: What's the date on it?</p> <p>14 THE WITNESS: January 3rd, yes.</p> <p>15 MS. O'DELL: Okay.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Turn over to page seven of Exhibit 7,</p> <p>18 please.</p> <p>19 A. Exhibit 7, page seven. Okay.</p> <p>20 Q. About three-fourths of the way down, you're</p> <p>21 reporting on anti-oxidant enzymes GPX and GSR for both</p> <p>22 PCR and ELISA assays, correct?</p> <p>23 A. Correct.</p> <p>24 Q. You report there that GPX and GSR were</p> <p>25 significantly decreased in response to talc treatment</p>
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<p>1 Q. So in this experiment, you show that both</p> <p>2 pro and anti-oxidants had a marked increase, correct?</p> <p>3 A. Let me check this. Hold on one second. So</p> <p>4 iNOS increased, MPO increased, GPX goes down, SOD3 goes</p> <p>5 up, GSR goes up. Some goes up. Catalase goes up.</p> <p>6 Yes.</p> <p>7 Q. But in your manuscript, you reported an</p> <p>8 increase in pro-oxidant enzymes and a decrease in the</p> <p>9 anti-oxidant enzymes. It seems that at least some of</p> <p>10 your results from your -- in your later manuscript and</p> <p>11 your report are different than what you're reporting</p> <p>12 here.</p> <p>13 MS. O'DELL: Object to form.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Is that correct?</p> <p>16 A. Okay. So this is done only with PCR. The</p> <p>17 manuscript was done extensively with PCR, and usually</p> <p>18 PCR data has to be complemented with the enzyme data,</p> <p>19 okay. In science, this is a common practice. PCR data</p> <p>20 is preliminary. It's an indication.</p> <p>21 If you don't complement it with</p> <p>22 protein and MRNA and protein ELISA activity, it is not</p> <p>23 very accurate. So we here objective, this was -- the</p> <p>24 intriguing results from this poster was to see whether</p> <p>25 or not there is any biological effect in use by the</p>	<p>1 under both PCR and ELISA assays, correct?</p> <p>2 A. Correct.</p> <p>3 Q. That's opposite of what you reported in your</p> <p>4 abstract, correct?</p> <p>5 A. Not correct.</p> <p>6 Q. Well, your abstract said that you reported a</p> <p>7 marked increase in the MRNA levels of anti-oxidant</p> <p>8 enzymes that include GSR and GPX1. How is that not the</p> <p>9 exact opposite?</p> <p>10 MS. O'DELL: You're referring to the</p> <p>11 poster, not an abstract?</p> <p>12 MR. HEGARTY: Yes, the poster.</p> <p>13 THE WITNESS: Let me explain,</p> <p>14 please. So this is done, number one --</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Here. You're referring to the poster?</p> <p>17 A. The poster is done with the Fisher powder.</p> <p>18 That's number one. This is done with a different dose.</p> <p>19 Here, this is done with -- this is a very preliminary,</p> <p>20 just to see if there is a biological effect.</p> <p>21 After we saw there is a biological</p> <p>22 effect, we did a comprehensive design of a study where</p> <p>23 we do 5, 20, a hundred doses for the right time,</p> <p>24 complemented with protein assays, ELISAs and etceteras.</p> <p>25 So that's my response.</p>

<p style="text-align: right;">Page 415</p> <p>1 MS. O'DELL: And you're referring to</p> <p>2 the manuscript?</p> <p>3 THE WITNESS: The manuscript.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. Do you remember me -- strike that. Do you</p> <p>6 remember us just looking at an abstract that talked</p> <p>7 about results from dosages of talc of 0, 200 and 500?</p> <p>8 Do you remember looking at that abstract?</p> <p>9 MS. O'DELL: What are you referring</p> <p>10 to?</p> <p>11 MR. HEGARTY: Well, the abstract you</p> <p>12 handed him. I'll show it to you. I'll mark it as --</p> <p>13 MS. O'DELL: Are you referring him</p> <p>14 back to his deposition previously?</p> <p>15 MR. HEGARTY: No, the one we just --</p> <p>16 THE WITNESS: Yeah. This --</p> <p>17 MR. HEGARTY: Let me ask a question.</p> <p>18 MS. O'DELL: I'm sorry.</p> <p>19 DEPOSITION EXHIBIT 26</p> <p>20 F-098 Abstract</p> <p>21 WAS MARKED BY THE REPORTER</p> <p>22 FOR IDENTIFICATION</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. I'm marking for purposes of the deposition</p> <p>25 Exhibit 26, which was that F dash 098 abstract that</p>	<p style="text-align: right;">Page 417</p> <p>1 Q. -- and instead it reads 0, 200 and 500</p> <p>2 micrograms per milliliter?</p> <p>3 A. Per mil. This -- this is a -- this --</p> <p>4 this abstract is this poster. So -- and I will -- I</p> <p>5 will double-check it, but I think it's a typo. This</p> <p>6 abstract is for the March meeting? Yes, so it is.</p> <p>7 It's gotta be a typo.</p> <p>8 Q. Who does the proofreading of your abstracts,</p> <p>9 Doctor?</p> <p>10 A. I do.</p> <p>11 Q. And it's your testimony that you just missed</p> <p>12 the dosages? Instead of having 0, 20 and a hundred,</p> <p>13 and a thousand, you missed and listed it 0, 200 and</p> <p>14 500?</p> <p>15 A. Is that possible? It could be. I don't</p> <p>16 know.</p> <p>17 Q. Is it your testimony that you did not run</p> <p>18 the same tests that you reported in your abstract and</p> <p>19 generated data for dosages at 200 and 500?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: This is what I did.</p> <p>22 It's detailed here in the lab notebook, it's published</p> <p>23 in the poster. We are not hiding anything. The poster</p> <p>24 was viewed by everybody at SRI meeting, so there's</p> <p>25 nothing to hide here.</p>
<p style="text-align: right;">Page 416</p> <p>1 counsel for Plaintiffs --</p> <p>2 MS. O'DELL: Which one was marked?</p> <p>3 MR. HEGARTY: It's the same one that</p> <p>4 you just had.</p> <p>5 MS. O'DELL: Thank you.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Do you see Exhibit 26, Doctor?</p> <p>8 A. Yes.</p> <p>9 Q. Where in the note -- in any of the notebooks</p> <p>10 we've looked at are there tests -- test results for</p> <p>11 0, 200 and 500 micrograms per milliliter of talc?</p> <p>12 A. This is this.</p> <p>13 Q. Where --</p> <p>14 A. It's a typo.</p> <p>15 Q. What's a typo?</p> <p>16 A. The 200, 500. It's a hundred -- it's 20 and</p> <p>17 a hundred and a thousand. This abstract is this</p> <p>18 poster.</p> <p>19 Q. You're saying that it should read --</p> <p>20 A. Yes.</p> <p>21 Q. -- 0, 20, and a hundred?</p> <p>22 A. It should read -- it should read 0, 20, a</p> <p>23 hundred, and a thousand.</p> <p>24 Q. 0, 20, a hundred, and a thousand --</p> <p>25 A. Yeah.</p>	<p style="text-align: right;">Page 418</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. And you're pointing to your poster?</p> <p>3 A. The poster, yes. This is the final outcome</p> <p>4 of abstract.</p> <p>5 MS. O'DELL: He was pointing -- he</p> <p>6 was pointing to the lab notebook and the data there.</p> <p>7 THE WITNESS: Yeah. This is what</p> <p>8 displayed in the meeting, so people will see this with</p> <p>9 the abstract. They will find out it's a mistake.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Doctor, I want to ask you about Exhibit</p> <p>12 Number 1, which was the --</p> <p>13 A. Go back here?</p> <p>14 Q. -- the lab notebook, which is Exhibit</p> <p>15 Number 2. This is the portion of the notebook starting</p> <p>16 at page 30 going forward.</p> <p>17 A. The manuscript?</p> <p>18 Q. For the manuscript.</p> <p>19 A. Yes.</p> <p>20 Q. Although you did indicate that some of the</p> <p>21 tests were in the first 30 pages that were then carried</p> <p>22 forward, correct?</p> <p>23 A. Just this part here, the 20.</p> <p>24 Q. You're pointing to page 20?</p> <p>25 A. Yes.</p>

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<p>1 Q. Can you identify in looking through the</p> <p>2 first several pages of this notebook, or throughout,</p> <p>3 whether there is any of your handwriting in this part</p> <p>4 of the notebook?</p> <p>5 A. Any of my handwriting?</p> <p>6 Q. Correct.</p> <p>7 A. I don't remember, but I'm sure, if I see it.</p> <p>8 Particularly I don't do it, but -- I don't see in here</p> <p>9 anything here in my handwriting.</p> <p>10 Q. Keep going.</p> <p>11 A. Keep going. I can't say yet. What page you</p> <p>12 are looking for?</p> <p>13 Q. I'm not looking at any particular page.</p> <p>14 A. You want me to keep going?</p> <p>15 Q. For example, if you look over at page 63.</p> <p>16 A. 63?</p> <p>17 Q. None of that is your handwriting on that</p> <p>18 page?</p> <p>19 A. 63.</p> <p>20 MS. O'DELL: And you're referring</p> <p>21 to --</p> <p>22 THE WITNESS: This?</p> <p>23 MS. O'DELL: -- page 63 as it was</p> <p>24 indicated in the lab notebook --</p> <p>25 THE WITNESS: Show me, please.</p>	<p>1 Q. Yes, that page.</p> <p>2 A. This? Okay.</p> <p>3 Q. There looks to be some odd handwriting on</p> <p>4 that page. Do you know what that is? It looks like</p> <p>5 almost Chinese characters.</p> <p>6 A. Yeah. This is a methodology. We just copy</p> <p>7 it.</p> <p>8 Q. I'm talking about the characters that look</p> <p>9 like they're Chinese on that page.</p> <p>10 A. Yeah.</p> <p>11 Q. Do you see that?</p> <p>12 A. Yeah. I don't read Chinese.</p> <p>13 Q. Is that Chinese?</p> <p>14 A. I don't know. I really don't know. But let</p> <p>15 me explain something, please, so I make you comfortable</p> <p>16 with this. This is a methodology page. This just</p> <p>17 describing the method. We copy it from -- you know,</p> <p>18 once we do RNA extraction, this is indicate what kit we</p> <p>19 use, what number, and, you know, the most important</p> <p>20 things.</p> <p>21 Q. Understood.</p> <p>22 A. But I don't know what that means.</p> <p>23 Q. My question only was -- only concerned if</p> <p>24 you could interpret that dark writing on that page.</p> <p>25 A. I do not read Chinese. I can't read it.</p>
Page 420	Page 422
<p>1 MR. HEGARTY: Correct, yeah.</p> <p>2 THE WITNESS: Can you show me the</p> <p>3 page?</p> <p>4 MS. O'DELL: -- Bates 35.</p> <p>5 THE WITNESS: Yes, this, no,</p> <p>6 nothing -- I don't -- I don't have anything here.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Do you know whose handwriting that is?</p> <p>9 A. That is either Florie or Ira.</p> <p>10 Q. I'll come back if I --</p> <p>11 A. I don't know. I don't know.</p> <p>12 Q. I'll come back if I want you to look at it</p> <p>13 further.</p> <p>14 A. Okay.</p> <p>15 Q. If you go to Bates number SAED 5.</p> <p>16 A. What page? What page?</p> <p>17 Q. Okay. If you want to look at the original,</p> <p>18 but we're going to have to work from the handwritten</p> <p>19 notes.</p> <p>20 A. Yeah, I like to look at the original,</p> <p>21 please.</p> <p>22 Q. Okay. Go to -- it looks like 33, page 33.</p> <p>23 A. Okay. The methodology.</p> <p>24 Q. It should look like this.</p> <p>25 A. The methodology, yeah. No. Hold on.</p>	<p>1 Q. Where in this part of the notebook are there</p> <p>2 totals for confluency?</p> <p>3 A. One more time, please.</p> <p>4 Q. Where in this notebook are there totals for</p> <p>5 confluency with regard to your cell tests?</p> <p>6 A. Can you please explain the word total?</p> <p>7 Q. Well, what does confluence mean?</p> <p>8 A. Yeah, thank you.</p> <p>9 Q. What does that mean?</p> <p>10 A. Confluence, when cells reach their double</p> <p>11 timing of division. Like we always start with -- if we</p> <p>12 want to start with one million cells for an experiment,</p> <p>13 we go half, and then we leave it for couple of days</p> <p>14 when they double so we can do the experiment. So they</p> <p>15 confluence when they reach 90 percent filling the</p> <p>16 plates.</p> <p>17 Q. Go over to page 31 of your notebook, please.</p> <p>18 At the bottom there a --</p> <p>19 A. What --</p> <p>20 Q. -- there's an entry dated 1-29-18.</p> <p>21 A. Can you just show me where? 31?</p> <p>22 Q. 31. It says 31 in the lower left-hand</p> <p>23 corner.</p> <p>24 A. This one?</p> <p>25 Q. Yes.</p>

<p style="text-align: right;">Page 423</p> <p>1 A. Yeah.</p> <p>2 Q. At the very bottom you say, 2 mil cells plus</p> <p>3 8 mils medium 100, and then dish. Do you see that?</p> <p>4 A. Um-hum.</p> <p>5 Q. And then underneath that it says, cells</p> <p>6 doubled in one day.</p> <p>7 A. Um-hum.</p> <p>8 Q. Do you see that?</p> <p>9 A. Um-hum.</p> <p>10 Q. How long does it normally take for</p> <p>11 epithelial cells to double?</p> <p>12 A. That's not a clear question. Are you</p> <p>13 talking about epithelial ovarian cancer cells?</p> <p>14 Q. Well, let's talk about cancer cells first,</p> <p>15 and then normal cells.</p> <p>16 A. Cancer cells, they double quick.</p> <p>17 Q. How quick?</p> <p>18 A. Very quickly, like next day.</p> <p>19 Q. How about noncancerous cells, normal ovarian</p> <p>20 epithelial cell?</p> <p>21 A. Normal ovarian epithelial take longer time.</p> <p>22 Q. Approximately how much longer?</p> <p>23 A. It depends on the lot. I think it's like a</p> <p>24 week to grow. They're very slow-growing cells. Like,</p> <p>25 for example, normal macrophages, they double quickly.</p>	<p style="text-align: right;">Page 425</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: She is referring to</p> <p>3 some of these cells here.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. What are you pointing to?</p> <p>6 A. On the top.</p> <p>7 Q. How do you know she's -- you're talking</p> <p>8 about the top of the next page, page 32?</p> <p>9 A. No, same page --</p> <p>10 Q. Okay.</p> <p>11 A. -- same page. Same page goal, total cells,</p> <p>12 macrophages KOV (ph), TOV, A2780, those cells. Now,</p> <p>13 what I'm saying is, this statement refers to the cancer</p> <p>14 cells, because cancer cells double in one day. We</p> <p>15 already know that.</p> <p>16 Q. So you're assuming that's what she's talking</p> <p>17 about?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Correct?</p> <p>21 A. I know what she's talking about.</p> <p>22 Q. And whose handwriting is this?</p> <p>23 A. That's Florie probably.</p> <p>24 Q. Under the date 1-29-18 it says subculture</p> <p>25 cells. What does that mean?</p>
<p style="text-align: right;">Page 424</p> <p>1 Q. In your cell tests, did all of the cells</p> <p>2 that you tested double in one day?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I just told you.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Where is the data in the lab notebook that</p> <p>7 reports on the length of time it took for the cells to</p> <p>8 double?</p> <p>9 A. That's from our past experience with these</p> <p>10 cells. We worked with these cells for 20 years.</p> <p>11 Q. Why did someone then report, though, here</p> <p>12 that certain cells doubled in one day?</p> <p>13 A. She wants to be extra good.</p> <p>14 Q. Can you tell what cells she's talking about</p> <p>15 here?</p> <p>16 A. The cancer cells, usually.</p> <p>17 Q. Are the cells identified in this part of the</p> <p>18 notebook?</p> <p>19 A. Except for the normal, yes.</p> <p>20 Q. Well, I'm talking about the entry on 1-29-18</p> <p>21 we've been looking at on page 31.</p> <p>22 A. Here.</p> <p>23 Q. Can you tell from the entry itself --</p> <p>24 A. Oh.</p> <p>25 Q. -- what cells she's referring to?</p>	<p style="text-align: right;">Page 426</p> <p>1 A. It means you split them.</p> <p>2 Q. How do you measure cell doubling?</p> <p>3 A. You start -- you count them. You start with</p> <p>4 half a million, next day you get one million, you use a</p> <p>5 hemocytometer, you measure them.</p> <p>6 Q. What is the instrument you use?</p> <p>7 A. Hemocytometer.</p> <p>8 MS. O'DELL: Would you spell that,</p> <p>9 please?</p> <p>10 THE WITNESS: I can't.</p> <p>11 MS. O'DELL: Okay.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Do you record --</p> <p>14 A. I can't, I can't.</p> <p>15 Q. Do you record the readings you get from a</p> <p>16 hemocytometer?</p> <p>17 A. You don't get reading. Okay. Here's what</p> <p>18 we do. We look at the cells. When you put half a</p> <p>19 million tells in 10 millimeter dish, they're like half</p> <p>20 full. You can look under the microscope, and you see</p> <p>21 half full.</p> <p>22 We got experience because we --</p> <p>23 we've worked with these cells for a very long time.</p> <p>24 And then the next day when you look at the same culture</p> <p>25 dish under the microscope, you'll see it all over the</p>

<p>Page 427</p> <p>1 dish, so we -- we reach confluency, we can work with 2 them. 3 You don't want to work with cells 4 when they are spaced out because they don't like to be 5 spaced out. They like to be simulate body where they 6 attach, touch each other. 7 MR. HEGARTY: Let's take a short 8 break, please. Thank you. 9 THE VIDEOGRAPHER: We're going off 10 the record, the time is 10:00. 11 (There was a recess taken.) 12 THE VIDEOGRAPHER: We're back on the 13 record at 10:23. 14 BY MR. HEGARTY: 15 Q. Dr. Saed, we're going to continue looking at 16 what we marked as Exhibit Number 1, which is your 17 notebook, Exhibit Number 2. If you turn to page 114 of 18 that notebook, please. 19 A. Statistical section? 20 Q. Correct. That section is dated October 6th, 21 2018, correct? 22 A. Correct. 23 Q. Who was the statistician for your test 24 results? 25 A. Steven. I forgot his last name. He</p>	<p>Page 429</p> <p>1 Exhibit Number 27, which was the -- which is the 2 manuscript submission to the Journal of Gynecologic 3 Oncology; is that correct? 4 A. Correct. 5 Q. That shows a submission date of August 22nd, 6 2018. There's a cover letter on about the second page 7 or third page. Do you see that? 8 A. I do. 9 Q. That letter is dated August 26th, 2018; is 10 that correct? 11 A. Yes. 22nd. 12 Q. August 22nd, 2018? 13 A. Yes. 14 Q. The statistical analysis we just looked at 15 is dated October 6th, 2018, so how could you submit a 16 manuscript on August 22nd, 2018 when the statistical 17 analysis was not done until October 6th, 2018? 18 A. Good question. So for the Gynecology 19 Oncology submission, we did not use the statistics from 20 here. We just did it our -- the p-value, like what you 21 noticed. We didn't -- we didn't submit a 22 statistical -- professional statistician in the -- in 23 the manuscript. Just -- it says here, if you look at 24 the materials and method, we just did the simple 25 p-value comparison test. That's all.</p>
<p>Page 428</p> <p>1 works -- he works with us in the department. 2 Q. Is he listed as one of the authors of your 3 manuscript? 4 A. No. 5 Q. You don't know his last name? 6 A. I can find out, but I don't know his last 7 name. Steven Kolisky or something. 8 Q. Was the data sent to him in a blinded 9 fashion? 10 A. This is how the data was sent to him. 11 Q. You're pointing to pages 115 through 124? 12 A. 115 -- yes, this is how -- this is how the 13 data were. 14 MS. O'DELL: And just to be clear, 15 what data are you referring to? What pages? 16 THE WITNESS: The data from PCR data 17 115 and 116, and then ELISA data 117, 118. 18 DEPOSITION EXHIBIT 27 19 Manuscript Submission to Journal of 20 Gynecologic Oncology 21 WAS MARKED BY THE REPORTER 22 FOR IDENTIFICATION 23 BY MR. HEGARTY: 24 Q. Doctor, we received as part of the 25 materials produced to us last week what I'm marking as</p>	<p>Page 430</p> <p>1 Q. Do you describe the Finkel p-value 2 comparison test in the manuscript? 3 A. I'm trying to look for it, if we did. It 4 says -- oh, okay. No, I take that back, I'm sorry. I 5 misspoke. Okay. So this -- this -- this date here 6 when we put it in the notebook, that's not when the 7 statistics were performed. I can't give you the exact 8 date when the statistics were performed. I have 9 to go back. I'm sorry, I misspoke. I have to go back 10 and tell you exactly when we did the statistics. But 11 here we describe the statistics that's done by this 12 method from Steven. 13 Q. What page are you pointing to? 14 A. It's page seven. Yeah, this is done by 15 statistician, so this is done by him. 16 Q. Right. The -- 17 A. The data was done by him. 18 Q. Your statistical description in the 19 manuscript submitted to the Gynecologic -- the Journal 20 of Gynecologic Oncology is the same as in your 21 manuscript? 22 A. Correct. 23 Q. So -- 24 A. That's the date where we entered it in the 25 book.</p>

<p style="text-align: right;">Page 431</p> <p>1 Q. 10-6-18 is the date it was entered into the 2 book?</p> <p>3 A. Correct. I remember it now.</p> <p>4 Q. What was the date the statistical analysis 5 was done?</p> <p>6 A. I can find out. I don't remember.</p> <p>7 Q. Is there any way --</p> <p>8 A. It's definitely different.</p> <p>9 Q. -- or how can you find out?</p> <p>10 A. I can go back and ask Steven. But it's 11 definitely -- if we -- if we listed it in the OB/GYN 12 Oncology submission, so it's definitely before that, 13 but I cannot remember the exact date.</p> <p>14 Q. Whose handwriting is -- is describing the 15 statistical analysis?</p> <p>16 A. This is --</p> <p>17 MS. O'DELL: What page are you 18 referring to, please?</p> <p>19 THE WITNESS: This is page 114.</p> <p>20 MR. HEGARTY: 114.</p> <p>21 THE WITNESS: This is Florie.</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Do you know when this --</p> <p>24 A. This was --</p> <p>25 Q. -- was added to the notebook? Was it added</p>	<p style="text-align: right;">Page 433</p> <p>1 MS. O'DELL: Objection to the form.</p> <p>2 THE WITNESS: Okay. If you read 3 here, if you go to the Results section of the 4 manuscript, now, each -- each section of the results 5 shows what the comparison were and what the actual 6 p-value is for that comparison.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Okay. Why was DMSO selected as a dilutant 9 for talc? Why that particular material?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: Yeah, the question is 12 not clear. I don't understand what you mean by --</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Well, were there -- were there alternatives 15 to DMSO?</p> <p>16 A. Were they -- to dissolve talc?</p> <p>17 Q. Correct.</p> <p>18 A. We got this from the other papers where they 19 used the -- let me -- let me try to remember. I don't 20 know if they were alternatives, but we used this DMSO 21 always in our lab to dissolve organic things, nonporous 22 stuff.</p> <p>23 Q. Some of your assays rely on optical density 24 measurements, correct?</p> <p>25 A. Correct.</p>
<p style="text-align: right;">Page 432</p> <p>1 on 10-6-18, or added at another time and dated 10-6-18?</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: I'm not sure when 4 we -- when we added this, but that was the last thing 5 we added, I think.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. And how were the p-values determined? By 8 what comparison?</p> <p>9 A. It states very clearly here in the 10 statistical section, if you read it. It's very 11 complicated statistical methods, because they are not 12 normally distributed, so they had to use this method 13 to -- there are a lot of comparison to do that, 14 comparison between treated versus untreated, comparison 15 between different doses, comparison between normal 16 versus cancer. It's a lot of that.</p> <p>17 Q. That was my question, is to what -- what 18 different samples are you doing the comparisons across?</p> <p>19 A. So all comparisons were statistically 20 significant. We were particularly interested between 21 control and treatment.</p> <p>22 Q. So it's your understanding that the p-values 23 compared talc untreated -- compared the untreated 24 controls to the treated controls?</p> <p>25 A. Okay.</p>	<p style="text-align: right;">Page 434</p> <p>1 Q. That includes PCR and ELISA, correct?</p> <p>2 A. ELISA you mean?</p> <p>3 Q. ELISA.</p> <p>4 A. I'm not sure about PCR, what are you 5 referring to, colorimetric?</p> <p>6 Q. Well, do you understand --</p> <p>7 A. I'm confused now.</p> <p>8 Q. Do you know whether PCR testing relies on 9 optical density measurements?</p> <p>10 A. Absolutely not.</p> <p>11 Q. How about ELISA?</p> <p>12 A. Correct, some of the ELISA are colorimetric, 13 is that what you're asking?</p> <p>14 Q. Well, I'm talking about optical density 15 measurements.</p> <p>16 A. Yeah, it's colorimetric.</p> <p>17 Q. What is the principle behind optical density 18 assays; that is, what do they measure?</p> <p>19 A. They measure change in color that sometimes 20 you cannot see if you add a substance to it.</p> <p>21 Q. Don't they measure the ability of the sample 22 to absorb or block light?</p> <p>23 A. They could. I don't know.</p> <p>24 Q. Do they?</p> <p>25 A. It depends on the assay. What assay are you</p>

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<p>1 referring to in particular?</p> <p>2 Q. Well, we just agreed that -- do you know one</p> <p>3 way or the other whether any of the assays that you ran</p> <p>4 rely on optical density measurements?</p> <p>5 A. Yes.</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: We -- some of the</p> <p>8 assays that we did for ELISA or, for example, protein</p> <p>9 assays to determine how much protein you have, it</p> <p>10 depends on change in wavelength and change in color in</p> <p>11 response to wavelength.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. But they --</p> <p>14 A. It's called colorimetric.</p> <p>15 Q. But it also -- but it measures the ability</p> <p>16 of the sample to absorb or block light, right?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: I'm not sure about</p> <p>19 absorb light. I'm not sure about that. It changes</p> <p>20 color based on the reaction. For example, with a</p> <p>21 protein assay, if you oxidize copper one to copper two,</p> <p>22 reduce it, that is accompanied by change in color. So</p> <p>23 the colorimetric assay at this specific wavelength will</p> <p>24 determine that. The change, the degree, how much color</p> <p>25 is changed, which is proportional to how much protein</p>	<p>1 MR. HEGARTY: I withdrew the</p> <p>2 question.</p> <p>3 MS. O'DELL: No. If he has started</p> <p>4 to answer the question that's on the table, he's</p> <p>5 entitled to finish his answer.</p> <p>6 MR. HEGARTY: I don't agree with</p> <p>7 that.</p> <p>8 MS. O'DELL: Otherwise, the record</p> <p>9 is not clear, and the doctor's trying to explain his</p> <p>10 answer.</p> <p>11 MR. HEGARTY: The record is clear.</p> <p>12 I withdrew the question.</p> <p>13 MS. O'DELL: No. The record is</p> <p>14 not --</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Doctor, listen to my question.</p> <p>17 MS. O'DELL: You may finish your</p> <p>18 answer, Doctor. Please continue.</p> <p>19 MR. HEGARTY: No, you may not finish</p> <p>20 your answer, because there's no question pending.</p> <p>21 There's nothing to answer.</p> <p>22 MS. O'DELL: That is --</p> <p>23 MR. HEGARTY: I withdrew the</p> <p>24 question.</p> <p>25 MS. O'DELL: Well, the answer --</p>
Page 436	Page 438
<p>1 you have.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Can the presence of particulate matter in</p> <p>4 the solution analyzed in these optical assays affect</p> <p>5 the results?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: Again, there is a</p> <p>8 misunderstanding of what's going on here.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. Well, I'm not talking about --</p> <p>11 MS. O'DELL: Excuse me.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. -- what you specifically --</p> <p>14 A. Let me finish, please.</p> <p>15 MS. O'DELL: No, no. Excuse me.</p> <p>16 MR. HEGARTY: I'll withdraw the</p> <p>17 question.</p> <p>18 MS. O'DELL: Let him finish his</p> <p>19 answer.</p> <p>20 MR. HEGARTY: I just withdrew the</p> <p>21 question.</p> <p>22 MS. O'DELL: No. He was --</p> <p>23 MR. HEGARTY: If you want to ask him</p> <p>24 the question, you can ask him.</p> <p>25 MS. O'DELL: No.</p>	<p>1 THE WITNESS: You asked me a</p> <p>2 question.</p> <p>3 MS. O'DELL: If the question</p> <p>4 is --</p> <p>5 MR. HEGARTY: You are not answering</p> <p>6 my question.</p> <p>7 MS. O'DELL: Excuse me. Excuse me.</p> <p>8 Let him finish, but if you're not going to let him</p> <p>9 finish, the question is struck and the answer is</p> <p>10 struck, so it can't be used against him --</p> <p>11 MR. HEGARTY: I agree.</p> <p>12 MS. O'DELL: -- if you're not going</p> <p>13 to let him finish his answer.</p> <p>14 MR. HEGARTY: I agree.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Let me ask a different question. Generally,</p> <p>17 without regard to the tests that you ran, can the</p> <p>18 presence of particulate matter in solutions analyzed by</p> <p>19 optical density assays affect the results?</p> <p>20 MS. O'DELL: Object to the form of</p> <p>21 the question. Excuse me. This is also an area that</p> <p>22 was covered last time, which representation by</p> <p>23 Ms. Sharko was that topics previously covered would not</p> <p>24 be reviewed again.</p> <p>25 So Doctor, if you understand the</p>

<p style="text-align: right;">Page 439</p> <p>1 question, I'll let this question be answered, but we're 2 not going to revisit every topic. 3 MR. HEGARTY: That was not the 4 representation -- 5 MS. O'DELL: Yes, it was. 6 MR. HEGARTY: -- and that was a 7 different question, and we said that -- I'm not going 8 to get into this debate because it's been debated 9 again. If you want to instruct him not to answer it, 10 you can do so at your peril. 11 BY MR. HEGARTY: 12 Q. Would you answer my question, please? 13 MS. O'DELL: Yeah, don't -- don't -- 14 don't say anything like that to me. 15 If you understand the question, you 16 may answer, Doctor. If you need the question repeated, 17 we can do that. 18 THE WITNESS: Okay. So just for the 19 record, can you please repeat the question? 20 BY MR. HEGARTY: 21 Q. Generally, without regard to the testing 22 that you ran, can the presence of particulate matter in 23 solutions analyzed by optical density assays affect the 24 results? 25 MS. O'DELL: Objection to the form.</p>	<p style="text-align: right;">Page 441</p> <p>1 carries proteins. 2 Q. How is that? 3 MS. O'DELL: I'm sorry. 4 THE WITNESS: The methodology -- 5 MS. O'DELL: You did not let him 6 finish, Mark. Please finish, sir. 7 THE WITNESS: Okay. This is really 8 easy. I can explain. This is very easy, Mark. The 9 methodology that you use, you treat, you wash the 10 cells, the cells are alive, you wash them, and then you 11 lyse them, and then you extract proteins. Hopefully, 12 the method that you extract proteins that you use does 13 not bring anything else, because we have been 14 establishing this from 1960. 15 It only carries proteins, and you go 16 through different phases of purification until you 17 extract total proteins. And this is very standard 18 method, and whatever you get there is only protein that 19 comes from cells. 20 BY MR. HEGARTY: 21 Q. How are you able to rule out that talc 22 particles did not enter the cell and were picked up 23 until the lyse and the extraction of proteins? 24 A. You have -- 25 MS. O'DELL: Objection to form.</p>
<p style="text-align: right;">Page 440</p> <p>1 You may answer any way you choose. You're not limited 2 to not talking about your own data. 3 THE WITNESS: The answer is -- I 4 mean, there's no answer yes or no here. This is very 5 complicated answer. You want me to explain, I can 6 explain. There is no yes or no. The question is 7 wrong. 8 BY MR. HEGARTY: 9 Q. Why is the question wrong? 10 A. Because it doesn't work like that. 11 Q. Okay. Tell me why it doesn't work like 12 that. 13 A. I'm tell you. I'll tell you. So when we -- 14 when we measure colorimetric assay for proteins, these 15 were proteins extracted from cells. They have no -- 16 nothing from outside, no talc, no powders, nothing 17 else. This is total protein extracted from lysate of 18 cells, so whatever is in the cells can interfere with 19 the assay, you can ask that question, that's fair, but 20 outside, no, because there is no outside source. You 21 know what I mean? 22 Q. What did you do in your tests to insure that 23 through your test procedures you didn't carry along any 24 talc particles? 25 A. You can't carry talc particles because it</p>	<p style="text-align: right;">Page 442</p> <p>1 THE WITNESS: That's why you have a 2 control. We have a control, treated versus untreated, 3 we extracted proteins from both cells, and then you 4 only extract purified proteins. We have purified 5 proteins there. 6 We just determine -- we use the 7 colorimetric assay, the BSA-based colorimetric assay to 8 determine how much protein we have there so we can 9 compare the same amount of protein between treated and 10 untreated. That's the idea. 11 BY MR. HEGARTY: 12 Q. But how does comparing untreated to treated 13 rule out that you didn't pick up talc particles that 14 had entered the cell and were then extracted with the 15 protein? 16 MS. O'DELL: Object to the form. 17 THE WITNESS: I already answered 18 you. Do you want me to repeat it and waste your time? 19 It's fine. It's up to you. 20 I already told you, there is -- we 21 extract -- the methodology that we use to extract -- to 22 purify -- how about that -- purify proteins from cells, 23 okay, is what you get there, your final product that 24 you get is proteins. 25 BY MR. HEGARTY:</p>

<p style="text-align: right;">Page 443</p> <p>1 Q. Okay. If you turn to page 32 of your lab 2 notebook. 3 A. I am not mad, I'm just -- sorry. Which 4 one? 5 MS. O'DELL: Exhibit 2. 6 BY MR. HEGARTY: 7 Q. Page 32. 8 A. Okay. 9 MS. O'DELL: Exhibit 2. 10 THE WITNESS: This one? 11 BY MR. HEGARTY: 12 Q. There's handwriting -- it's dated 2-1-2018, 13 correct? 14 A. Yes. 15 Q. There's a handwritten reference to UNT, 16 both -- and then there's is a typed UNT. What does UNT 17 mean? 18 A. Untreated. 19 Q. Was there only one control for each cell 20 type? 21 A. One dish, yes. 22 Q. So there could be only one volume of DMSO 23 added per cell line, correct? 24 MS. O'DELL: Objection to form. 25 THE WITNESS: The question is not</p>	<p style="text-align: right;">Page 445</p> <p>1 BY MR. HEGARTY: 2 Q. Well, you said you added DMSO to the 3 controls that corresponded with the amount of talc in 4 DMSO to the various cell lines, correct? 5 MS. O'DELL: Object to form. 6 THE WITNESS: Okay, let me answer 7 you. So you have, for example, EL1, which is 8 macrophages, okay. You have one, two, three, four 9 plates, cells. You call them plates, right. So plate 10 one is untreated. You add -- we -- we make the 11 concentrations 5, 10, 20, a hundred in a fixed volume 12 of DMSO. Let's say it's 50 microliters, okay. 13 So we add 50 microliters of DMSO to 14 untreated, 50 microliters to -- that contain 15 5 micrograms to this one, 50 microliters DMSO that 16 contains 20 micrograms to the next one, 50 microliters 17 of DMSO that contains a hundred microgram of talc to 18 the next one. So they all have the same volume. But 19 one with -- without the powder, and one with the 20 various concentration of powder. 21 BY MR. HEGARTY: 22 Q. I gotcha. Would you turn to page 67 of your 23 lab notebook, Exhibit 2? Are you there? 24 A. Yes. 25 Q. You list there your calculations for CA-125,</p>
<p style="text-align: right;">Page 444</p> <p>1 clear really. 2 BY MR. HEGARTY: 3 Q. Well, you had -- said you had one control 4 dish for each cell line tested, correct? 5 A. Yes. 6 Q. And in that control dish, you would add an 7 amount of DMSO, correct? 8 A. Correct. 9 Q. So how much DMSO did you add to that one 10 control dish for each of the cell lines tested? 11 A. Okay. 12 MS. O'DELL: Object to form. 13 THE WITNESS: So let me answer this. 14 So we have DMSO alone, and DMSO dissolved in a DMSO 15 talc. So whatever treatment volume we use here, we use 16 the same here. So if we used 50 microliters here to 17 treat the cells from the treated, from the DMSO talc, 18 we used 50 microliters again for DMSO control. Same 19 volume. 20 BY MR. HEGARTY: 21 Q. So you had -- so you had three control 22 dishes so that you would have to control dish for each 23 dose of talc? 24 MS. O'DELL: Object to the form. 25 THE WITNESS: Three control dishes?</p>	<p style="text-align: right;">Page 446</p> <p>1 correct, in the table at the bottom? 2 A. Yes. 3 Q. What test methods or what testing was done 4 to get those levels, get those values? 5 A. I don't understand the question. 6 Q. Well, what -- what tests -- what -- how do 7 you test the -- the samples for CA-125? What is the -- 8 what is the process for doing that, that generates 9 these numbers? 10 A. ELISA. 11 Q. And physically how does it -- how is it 12 done? Do you put it in a machine and it generates 13 the -- the data? 14 A. Physically you -- you are provided with a 15 standard curve, I mean CA-125 protein with different 16 concentration, yes, and then you can use the different 17 concentration to create the standard curve, and then 18 you can run the standard curve with your samples as 19 indicated by the 96 full plate here, and then ELISA 20 read it, right, and then you get the results. 21 Q. What is the date of the plate setup for this 22 test? It says plate setup, but I don't see a date for 23 it. 24 A. It's -- it is -- yes, I see the date. It's 25 right here. It says January 17. See it?</p>

<p style="text-align: right;">Page 447</p> <p>1 Q. That is the date of the plate setup?</p> <p>2 A. If it says inside here, yes.</p> <p>3 Q. What was the date that the test results were</p> <p>4 generated? When were the samples tested? Is there a</p> <p>5 date next to --</p> <p>6 A. No, no. They're all together. You can't</p> <p>7 run standard and stop and leave and go home. They're</p> <p>8 all run at the same time because you need to compare to</p> <p>9 a standard.</p> <p>10 Q. When were the cells treated for the CA-125</p> <p>11 test?</p> <p>12 A. When were the cells treated for -- this</p> <p>13 is -- I think it's in the beginning of the ELISA.</p> <p>14 So -- yes. So this -- I don't know when we treated</p> <p>15 this. It must be the same date. I don't have a note</p> <p>16 of that.</p> <p>17 Q. Well, you report in your manuscript --</p> <p>18 A. January 17.</p> <p>19 Q. -- that you tested for CA-125 up to</p> <p>20 72 hours --</p> <p>21 A. Yes.</p> <p>22 Q. -- of exposure, correct?</p> <p>23 A. Yes.</p> <p>24 Q. Where is that reflected in your notebook?</p> <p>25 A. It's here.</p>	<p style="text-align: right;">Page 449</p> <p>1 dose only.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. For how long of exposure?</p> <p>4 A. That's -- here it says 48 hours, but it is</p> <p>5 72 hours.</p> <p>6 Q. Where then is the data in your notebook</p> <p>7 showing treatment of the cells for the CA-125 test, and</p> <p>8 then 72 hours later you're running the test results?</p> <p>9 A. I can't see it here. I cannot see it in my</p> <p>10 notebook.</p> <p>11 Q. Okay. Let's --</p> <p>12 A. But I have some cells from January 10,</p> <p>13 CA-125 ELISA with the trial, for the trial from --</p> <p>14 Q. But for 72 hours, they would have been</p> <p>15 treated 72 hours before January 17th, correct?</p> <p>16 A. Yes, 72 hours it says.</p> <p>17 Q. What page are you pointing to?</p> <p>18 A. This is page 13. This is the trial</p> <p>19 experiment that we did.</p> <p>20 Q. Right now I'm talking about the -- not the</p> <p>21 trial experiment, the manuscript experiment.</p> <p>22 A. They would have been done the same date</p> <p>23 almost. This is January 10, that's January 17. So we</p> <p>24 were treating the cells probably at the same time. I'm</p> <p>25 not sure. It's not written here.</p>
<p style="text-align: right;">Page 448</p> <p>1 MS. O'DELL: What page are you</p> <p>2 referring to?</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Yeah, what page are you referring to?</p> <p>5 A. January -- 63. Where is the cell treatment</p> <p>6 for this. Yeah. I only have the date for the assay on</p> <p>7 here. But the treatment, these are the 12, 12 plus</p> <p>8 100. Let me check the manuscript which one we did</p> <p>9 here. CA-125. Let's see. So for this one, we used a</p> <p>10 hundred microgram per mil, one dose to do the assay.</p> <p>11 Q. And in your manuscript you say activity</p> <p>12 assay was utilized to determine apoptosis of all cell</p> <p>13 lines -- I'm sorry, that's apoptosis. Let me back up</p> <p>14 to --</p> <p>15 A. If you go to here, you can see the -- the</p> <p>16 legend. If you go to legend for CA-125, and it tells</p> <p>17 you that we used a hundred micrograms per mil dose, and</p> <p>18 in this time, we only did one dose, the highest dose.</p> <p>19 MS. O'DELL: What -- what figure are</p> <p>20 you referring to?</p> <p>21 THE WITNESS: It is figure four</p> <p>22 legend. It says increase CA-125, and this one is</p> <p>23 about treatment, and these are the cell lines that we</p> <p>24 used, they are here, and the table, and this is</p> <p>25 referred to a hundred micrograms per mil. It's one</p>	<p style="text-align: right;">Page 450</p> <p>1 Q. You do agree that you would have had to</p> <p>2 treat the cells three days before January 17th,</p> <p>3 correct?</p> <p>4 A. Correct. So this is why the trial</p> <p>5 experiment started on January 10th.</p> <p>6 Q. You can't find in the notebook on --</p> <p>7 notebook Exhibit Number 2, treatment for the CA-125</p> <p>8 test on January 14th, 2018?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: I only -- I found</p> <p>11 the trial experiment that I did, which is dated</p> <p>12 January 10.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. That couldn't be the same cell line, right?</p> <p>15 A. I'm not sure.</p> <p>16 Q. If you go to your -- your page 50 in your</p> <p>17 notebook, please.</p> <p>18 A. Okay. That's 33?</p> <p>19 Q. I'm sorry. Go to page 49 of your notebook.</p> <p>20 A. 49, which is GPX.</p> <p>21 Q. Correct. If you would look at sample ID</p> <p>22 358. Do you see that sample ID to the left?</p> <p>23 A. 358, macrophages, 20 micrograms per mil.</p> <p>24 Q. And if you go over to the normalized data to</p> <p>25 the far right, do you see that normalized data of 2.17,</p>

<p style="text-align: right;">Page 451</p> <p>1 2.46 and 2.39?</p> <p>2 A. Yes.</p> <p>3 Q. And do you see the average of 2.47?</p> <p>4 A. Yes.</p> <p>5 Q. How can you have an average of 2.47 when</p> <p>6 none of the normalized data is above 2.46?</p> <p>7 A. 2 point -- hold on one second. 2.17, 2.46,</p> <p>8 2 point -- actually, it would be lower. That's even</p> <p>9 better.</p> <p>10 Q. That's not my question, Doctor.</p> <p>11 A. I know. I understand. I'm just looking why</p> <p>12 we -- probably this happened. The answer is, probably</p> <p>13 it's a typo, it's a mistake. But if you add it, then</p> <p>14 you will get a lower value.</p> <p>15 Q. Understood. But if you -- when I did the</p> <p>16 average, I came up with 2.34.</p> <p>17 A. Yes.</p> <p>18 Q. Why is this reporting 2.47?</p> <p>19 A. These are formulas already linked to the --</p> <p>20 each section, so maybe sometimes by mistake you -- you</p> <p>21 link to the wrong cell number.</p> <p>22 Q. Can you explain why the number is wrong?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: I can't explain. Just</p> <p>25 a mistake.</p>	<p style="text-align: right;">Page 453</p> <p>1 A. Yes.</p> <p>2 Q. You go over and you see the 9.98 number, the</p> <p>3 11.63 number and 10.50 number?</p> <p>4 A. Yes.</p> <p>5 Q. When I took -- added those numbers and</p> <p>6 divided by three, I got 10.7 instead of 11.07. Do you</p> <p>7 know why that is the case?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: What did you get?</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Well, if you add those three numbers and you</p> <p>12 divide by three, you get 10.7, not 11.07, and my</p> <p>13 question to you is, do you know why that's the case?</p> <p>14 A. Can I add them?</p> <p>15 Q. Yes.</p> <p>16 MS. O'DELL: Do you need a piece of</p> <p>17 paper?</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Do you have a --</p> <p>20 A. Yeah.</p> <p>21 Q. -- phone?</p> <p>22 A. Yeah. 9.98 plus -- 10.7. This is 11.07. I</p> <p>23 don't know. It's a very small difference, nothing</p> <p>24 significant.</p> <p>25 Q. Would you turn over to page 105 of your</p>
<p style="text-align: right;">Page 452</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. If you go over to --</p> <p>3 A. If the -- for the record, if they were</p> <p>4 averaged correctly, you will get the lower number --</p> <p>5 Q. If you would --</p> <p>6 A. -- which is -- which is better.</p> <p>7 Q. When you say better, better in what way?</p> <p>8 A. I mean it's more consistent with the -- with</p> <p>9 the data.</p> <p>10 Q. Go over to page 61, please.</p> <p>11 A. ELISA?</p> <p>12 Q. It's just a table of data.</p> <p>13 A. This? 61? Yes.</p> <p>14 Q. Okay.</p> <p>15 A. Let me see what's this first.</p> <p>16 Q. It should be a table dated January 11, 2018.</p> <p>17 A. This is for catalase.</p> <p>18 Q. Okay.</p> <p>19 A. January 11?</p> <p>20 Q. Yes.</p> <p>21 A. Yes, I got that.</p> <p>22 Q. If you look at the very first line over</p> <p>23 A2780 dash C, do you see that line?</p> <p>24 A. Um-hum.</p> <p>25 Q. Yes?</p>	<p style="text-align: right;">Page 454</p> <p>1 notebook, please?</p> <p>2 A. 105.</p> <p>3 Q. In the chart on that page, you list the</p> <p>4 results for the HOSEpic control and for talc, correct?</p> <p>5 MS. O'DELL: What page are you on?</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. That cell line?</p> <p>8 A. H --</p> <p>9 Q. H-O-S-E --</p> <p>10 A. HOSEpic, yeah.</p> <p>11 Q. HOSEpic?</p> <p>12 A. Um-hum.</p> <p>13 Q. For the control and for talc, the results</p> <p>14 are listed, correct?</p> <p>15 MS. O'DELL: I'm sorry, what page</p> <p>16 are you on?</p> <p>17 THE WITNESS: I don't understand</p> <p>18 what you're saying.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Well, you list results for the cell line</p> <p>21 HOSEpic control and talc, correct?</p> <p>22 A. Correct.</p> <p>23 MS. O'DELL: You're on page 105?</p> <p>24 THE WITNESS: 105?</p> <p>25 MS. O'DELL: Give me just a moment,</p>

<p style="text-align: right;">Page 455</p> <p>1 'cause I don't think I'm on the same page. This is 2 what I have for -- what page are the Bates number, 3 Mark, just to make sure? 4 MR. HEGARTY: 85. He's working off 5 the other number. 6 MS. O'DELL: I know that. But I'm 7 just trying to make sure -- 8 THE WITNESS: 105. Thank you for 9 your help. 10 BY MR. HEGARTY: 11 Q. In your manuscript, you don't report the 12 results for the HOSEpic cell line. Why is that? 13 A. Because this is a normal ovarian, epithelial 14 ovarian, and we already did another normal epithelial 15 ovarian, so -- and we had the same results. The 16 HOSEpic is normal. 17 Q. Would you go a couple pages over to 107, 18 please? 19 A. MTT? 20 Q. MTT Cell Proliferation. 21 A. Um-hum. 22 Q. Do you see that page? 23 A. I do. 24 Q. In the table above the graph, it says 25 Cytotoxicity Percent. Do you see that table?</p>	<p style="text-align: right;">Page 457</p> <p>1 Q. Well, 9-6. 2 A. 9-6? 3 Q. Do you see where it says, the first line 4 after 9-6, after 24 hours treatment? 5 A. Um-hum. 6 Q. Yes? 7 A. Yes. 8 Q. And turn to the next page, the raw data is 9 reported on 9-6-2018; is that correct? 10 A. Yes. 11 Q. In your manuscript, though, you report cell 12 proliferation data for 72 hours. So here you're 13 seeding cells on 9-4, and then you're taking tests 14 after 24 hours. Where does the 72 hours come from? 15 Where did the 72 hours come from? 16 A. So 9-4, treat cells with talc. 9-5, 9-6 is 17 24. Oh, yeah. So this one -- this one is 24 hours 18 only. What does it say here? 19 Q. Well -- 20 A. I want to see it. 21 Q. Yes. It's over on -- if you look at 22 page six, you report cell proliferation and apoptosis 23 using MTT cell proliferation assays with talc, 24 100 micrograms per milliliter for 72 hours. 25 A. Yes, this is -- this is 24 hours.</p>
<p style="text-align: right;">Page 456</p> <p>1 A. Yes. 2 Q. Then in the graph below it says, cell 3 proliferation above baseline percentage. Why does the 4 table report cytotoxicity and the graph report cell 5 proliferation above baseline? 6 A. I need to explain. 7 Q. Okay. 8 A. Okay. So MTT measures cell proliferation 9 that is proportional to cell death. So the cells that 10 proliferate, there are cells that die. So you can here 11 the percentage of cell proliferation above the baseline 12 is the cells that proliferated, here is the toxicity, 13 the cells that died. So it's two different ways of 14 interpreting it. 15 Q. Go back one page to 106, please. 16 A. 106. 17 Q. At the top it says, MTT Cell Proliferation 18 Assay, correct? 19 A. Correct. 20 Q. You report on that page the seeding of cells 21 on 9-4-2018, correct? 22 A. Correct. 23 Q. And then below on 9-6-28 (sic) it says after 24 24 hours treatment, correct? 25 A. 9-5.</p>	<p style="text-align: right;">Page 458</p> <p>1 Q. But you -- that same table -- I'm sorry, the 2 same graph you have there is the same graph you have in 3 your manuscript. 4 A. Yes. 5 Q. So where is this data for 72 hours? 6 A. There is no data. This is the data. It's 7 24 hours. 8 Q. So why did you report in your manuscript 9 that it's for 72 hours? 10 A. It's a typo, a mistake. Because we've 11 done -- everything else is 72 hours, that's why. 12 Q. So it's your testimony that in your 13 manuscripts where you report cell proliferation from 14 100 micrograms per milliliter of talc for 72 hours, 15 that should be 24 hours? 16 A. What we did here is clearly explained in the 17 notebook. It says when we seeded the cells and when we 18 treated the cells and when we did the assay, and that's 19 24 hours. It says after 24 hours treatment. 20 Q. Understood. Why does your manuscript say 21 72 hours? 22 A. It's a mistake. I told you, okay. But it 23 says clearly in my notebook, it says after 24 hours of 24 treatment, and this is the dose, 100 microgram per mil 25 of talc.</p>

<p style="text-align: right;">Page 459</p> <p>1 Q. Do you intend to correct that mistake, 2 Doctor? 3 A. Of course. But this -- this manuscript is 4 not rejected. 5 Q. I understand that. But the manuscript has 6 been accepted with you reporting your data for cell 7 proliferation for 72 hours, correct? 8 A. This is a normal practice. When we get the 9 proof, we go over the manuscript, we make sure 10 everything is correct, and we -- we edit it. It's not 11 the first time. It's very basic. 12 Q. Did you find this mistake before right now? 13 A. The 24 hours? 14 Q. Yes. 15 A. I'm sure we will find it when we read it. 16 Q. That's not my question. My question is, is 17 this the first time you're appreciating that you made a 18 mistake in your manuscript, that it should be 24 hours 19 instead of 72 hours? 20 A. I answered. 21 Q. What's your answer? 22 A. I would have picked it up on the reproof. 23 Q. Had you picked it up before right now? 24 A. I didn't get the reproof yet. 25 Q. But had you picked up the error before right</p>	<p style="text-align: right;">Page 461</p> <p>1 directly, correct? 2 A. I don't understand your question. 3 Q. Well, it's not a direct measure of cell 4 proliferation, is it? 5 MS. O'DELL: Object to form. 6 THE WITNESS: I don't understand 7 your question. 8 BY MR. HEGARTY: 9 Q. What don't you understand? 10 A. The question is scientifically wrong. 11 Q. Why is it scientifically wrong? 12 A. What you mean by direct? 13 Q. Well, it's an indirect measure of cell 14 proliferation? 15 A. I'm asking you, what do you mean by -- you 16 said -- you asked me if it's direct measurement, right? 17 Q. You're not -- 18 A. I'm asking you, what do you mean by direct? 19 Q. You're not counting the number of cells that 20 are proliferating? 21 A. Of course you are. 22 MS. O'DELL: Excuse me. Object to 23 the form. 24 BY MR. HEGARTY: 25 Q. In what way?</p>
<p style="text-align: right;">Page 460</p> <p>1 this moment? 2 A. You want me to say something? Okay. I 3 already said, when I get the proof -- this is a 4 mechanism in our lab. When I read the proof, we sit 5 down, and we make sure that everything is accurate 6 according to our notebook, what we did, and then we 7 have the opportunity to fix it. 8 Q. Had you -- 9 A. I have not got the proof yet, so I will look 10 for it, and when it comes, I will fix whatever needs to 11 be fixed. 12 Q. But were you aware of this mistake before 13 right now? 14 A. I didn't look specifically for this one. 15 Q. When you say the proof, you're talking about 16 the proof from the publisher? 17 A. Yes, the proof. 18 Q. You don't -- you don't do that comparison 19 before you send it to the publisher? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: We do, we do, but 22 sometimes with too many data, too much information, you 23 know, you do mistakes. 24 BY MR. HEGARTY: 25 Q. Now, MTT doesn't measure cell proliferation</p>	<p style="text-align: right;">Page 462</p> <p>1 MS. O'DELL: Object to the form. 2 THE WITNESS: Okay. The -- okay. 3 So the basis of the -- of the MTT that cells that 4 absorb the dye are the cells that are proliferating, 5 and cells that do not absorb the dye, cells are dying, 6 so you can take that, it's a direct measure of 7 proliferation. 8 BY MR. HEGARTY: 9 Q. And how do you count the cells? 10 A. The dye, the ELISA. You do the 11 measurements, you do the quantitation, how much dye was 12 absorbed for cells. So when you say direct, that's one 13 of the best techniques that we have. And by the way, 14 this is very standard technique to measure cell 15 proliferation. 16 Q. Go over, please, to what would be page 104 17 of your notebook, Exhibit 2, 104. It should look like 18 this. 19 A. Yes. 20 Q. These are the -- 21 A. SNPs. 22 Q. The talc matter results? 23 A. Correct, the SNP analysis. 24 Q. These show color dots that are very close 25 together, correct?</p>

<p style="text-align: right;">Page 463</p> <p>1 A. Yes.</p> <p>2 Q. Who read the charts and recorded the data?</p> <p>3 A. I need to explain this.</p> <p>4 Q. Okay.</p> <p>5 A. So this is done by a Core Facility at</p> <p>6 Wayne State University. We sent them the DNA from the</p> <p>7 treated cells, and they run the SNP assay, and they</p> <p>8 give us the data exactly as you see it here.</p> <p>9 Q. Do you know how they generate that data?</p> <p>10 A. I don't.</p> <p>11 Q. Do you know who generated the data, who at</p> <p>12 Core?</p> <p>13 A. By name?</p> <p>14 Q. Yes.</p> <p>15 A. No. We submit it online. There's a</p> <p>16 form that you fill out, and which -- it goes to</p> <p>17 them, and you send them the samples. I can't remember</p> <p>18 names.</p> <p>19 Q. Do you know what the two colored dots</p> <p>20 represent?</p> <p>21 A. I'm not sure, but probably for alleles,</p> <p>22 different alleles.</p> <p>23 Q. Well, you have green dots and you have red</p> <p>24 dots. What do those mean?</p> <p>25 A. Alleles, C versus T, A versus G. I'm not</p>	<p style="text-align: right;">Page 465</p> <p>1 Q. Have you ever done in any -- strike that.</p> <p>2 Have you ever done any tests to look for neoplastic</p> <p>3 changes in cells directly?</p> <p>4 A. No.</p> <p>5 Q. Have you ever taken results like you</p> <p>6 had with your tests and applied them in an invitro</p> <p>7 model?</p> <p>8 A. I'm sorry?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: I'm not clear.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Have you ever taken results of any testing</p> <p>13 you've done like this and taken them and applied them</p> <p>14 in an animal model?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: Can you explain what</p> <p>17 "like this" means? Like transformed?</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Well, the tests that you did for your</p> <p>20 manuscript, have you ever done tests like those and</p> <p>21 applied those in an invivo model?</p> <p>22 A. What tests?</p> <p>23 MS. O'DELL: Object to form.</p> <p>24 THE WITNESS: What tests you're</p> <p>25 talking about?</p>
<p style="text-align: right;">Page 464</p> <p>1 sure exactly how they --</p> <p>2 Q. None of your tests showed development of</p> <p>3 neoplastic cells, correct?</p> <p>4 A. Proliferation does.</p> <p>5 Q. Are you equating cell proliferation with</p> <p>6 neoplastic development?</p> <p>7 A. It's an indirect --</p> <p>8 MS. O'DELL: Object to form.</p> <p>9 THE WITNESS: It's an indirect</p> <p>10 proliferation. It is an indirect measure of -- of the</p> <p>11 beginning of a transformation.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Well, you showed no transformation of normal</p> <p>14 ovarian cells to cancerous cells, correct?</p> <p>15 MS. O'DELL: Object to form.</p> <p>16 THE WITNESS: No. These are</p> <p>17 immortalized normal. They do not transform.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Well, there are tests -- are there not tests</p> <p>20 to measure whether normal cells have undergone</p> <p>21 neoplastic changes?</p> <p>22 A. Again, the question is not clear, because</p> <p>23 the normal that we used are immortalized cell lines.</p> <p>24 That means they do not change unless you really beat</p> <p>25 them up.</p>	<p style="text-align: right;">Page 466</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. The tests in your manuscript, the tests in</p> <p>3 your notebook.</p> <p>4 A. I have done one million tests. Which one?</p> <p>5 Q. Any one. Have you ever applied in any -- in</p> <p>6 any of your work, have you ever taken any of your work</p> <p>7 and applied it in an invivo model?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: Not related to this</p> <p>10 project?</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Yes, in any sense.</p> <p>13 A. I don't remember. I really didn't</p> <p>14 understand the question, to be honest with you.</p> <p>15 MS. O'DELL: Well, don't answer a</p> <p>16 question if you don't understand it.</p> <p>17 THE WITNESS: I really did not</p> <p>18 understand it.</p> <p>19 MS. O'DELL: If you don't --</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. If you can --</p> <p>22 MS. O'DELL: If you don't understand</p> <p>23 the question, please don't --</p> <p>24 THE WITNESS: It's a very confusing</p> <p>25 question. It's made of two components that contradict</p>

<p style="text-align: right;">Page 467</p> <p>1 each other.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. You can treat cells and then inject those</p> <p>4 cells into an animal model, correct?</p> <p>5 A. What do you mean by animal model?</p> <p>6 Q. Like a rat or a mouse?</p> <p>7 A. Why would you do that?</p> <p>8 Q. To do an invivo test for your results?</p> <p>9 A. That's the wrong way to do invivo test.</p> <p>10 Q. How do you do an invivo test?</p> <p>11 A. You create from -- invivo from within, not</p> <p>12 inject the cells.</p> <p>13 Q. Okay. Have you ever taken cells that you</p> <p>14 created --</p> <p>15 A. I didn't -- you don't take cells for invivo.</p> <p>16 You create the environment invivo for the animal and</p> <p>17 watch for the response of the animal.</p> <p>18 Q. Have you ever done that?</p> <p>19 A. No.</p> <p>20 MR. HEGARTY: Okay. We need to</p> <p>21 change tapes. Let's go off the record.</p> <p>22 THE VIDEOGRAPHER: We're going to go</p> <p>23 off the record. The time is now 11:09.</p> <p>24 (There was a recess taken.)</p> <p>25 THE VIDEOGRAPHER: We're back on the</p>	<p style="text-align: right;">Page 469</p> <p>1 ratio.</p> <p>2 Q. What's the normal ratio for 260 to 280?</p> <p>3 A. Around 2.</p> <p>4 Q. When you say around 2, what is the range?</p> <p>5 A. 1.7, 1.8, 1.9, 2.</p> <p>6 Q. How about -- strike that. Many are above</p> <p>7 that range. You have numbers is at 2.31, 2.25, 2.24.</p> <p>8 Do you see that?</p> <p>9 A. I do.</p> <p>10 Q. Could that indicate -- could those values</p> <p>11 indicate the presence of contaminants?</p> <p>12 A. No.</p> <p>13 Q. Why not?</p> <p>14 A. This is just indicate the -- the percentage</p> <p>15 of degradation of RNA. Nothing to do with</p> <p>16 contamination. The quality of the RNA and whether</p> <p>17 there is DNA in there.</p> <p>18 Q. If you look back at Exhibit 26, that's the</p> <p>19 abstract that we marked F dash 098.</p> <p>20 A. Um-hum.</p> <p>21 Q. I'm sorry.</p> <p>22 MS. O'DELL: Exhibit 26?</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. I'm sorry. We're looking at --</p> <p>25 A. The manuscript?</p>
<p style="text-align: right;">Page 468</p> <p>1 record, the time is 11:19.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Doctor, please turn to page 35 of your lab</p> <p>4 notebook, Exhibit 2. At the top it should read</p> <p>5 RNA Concentration. Is that correct?</p> <p>6 A. Correct.</p> <p>7 Q. Yes?</p> <p>8 A. Yes.</p> <p>9 Q. If you look over to the right-hand column</p> <p>10 where it lists at the top 260 slash 230, do you see</p> <p>11 that?</p> <p>12 A. The ratio? Yes.</p> <p>13 Q. Yes, the ratio. The normal ranges for the</p> <p>14 260 to 230 ratio is 2.0 to 2.2, correct?</p> <p>15 A. Not correct.</p> <p>16 Q. What is the normal ratio?</p> <p>17 A. We don't look at 260, 230. We look at 260,</p> <p>18 280.</p> <p>19 Q. Understood. But I'm focusing on 260 and</p> <p>20 230.</p> <p>21 A. I don't know.</p> <p>22 Q. What's the normal ratio?</p> <p>23 A. I don't know. It doesn't mean anything.</p> <p>24 Q. What doesn't mean anything?</p> <p>25 A. The 230. What we look at is the 260, 280</p>	<p style="text-align: right;">Page 470</p> <p>1 Q. Just a second. We're looking -- I think I</p> <p>2 gave you the SRI previously, the SRI abstract. You</p> <p>3 have that over there?</p> <p>4 A. CA-125?</p> <p>5 Q. Yes. What's that marked as?</p> <p>6 A. CA-125, that's 25.</p> <p>7 Q. Okay. If you look at Number 25, you report</p> <p>8 there in the Method section that you treated for</p> <p>9 purposes of your CA-125 cells with a thousand</p> <p>10 micrograms per milliliter of talc for 72 hours; is that</p> <p>11 correct?</p> <p>12 MS. O'DELL: Give me just a minute,</p> <p>13 because you didn't give me a copy of that exhibit, so I</p> <p>14 need to pull it up. Would you repeat the question,</p> <p>15 please?</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. Do you need the question repeated, Doctor?</p> <p>18 A. Please.</p> <p>19 MS. O'DELL: I need the question</p> <p>20 repeated.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. Doctor, in the Method section --</p> <p>23 MS. O'DELL: I don't have access to</p> <p>24 it real time, so if you'll give me a moment to hear the</p> <p>25 question.</p>

<p style="text-align: right;">Page 471</p> <p>1 MR. LAPINSKI: Miss Court Reporter,</p> <p>2 could you repeat the question back, please?</p> <p>3 MR. HEGARTY: Let me -- let me</p> <p>4 restate it.</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Doctor, in the Method section for this</p> <p>7 abstract, you report on treating primary normal</p> <p>8 epithelial cells with or without a thousand micrograms</p> <p>9 per milliliter of talc for 72 hours. Is that what you</p> <p>10 did?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: Yes.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Where is the data that you reported treating</p> <p>15 for a thousand micrograms per milliliter of talc for</p> <p>16 72 hours for the CA-125 test?</p> <p>17 A. Page 12 and 13.</p> <p>18 Q. Of which book?</p> <p>19 A. Two.</p> <p>20 MS. O'DELL: And that's</p> <p>21 Exhibit 24. Excuse me. I apologize. It's not</p> <p>22 Exhibit 24. It's --</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Can you show me that page, please?</p> <p>25 A. (The witness complies).</p>	<p style="text-align: right;">Page 473</p> <p>1 that linked genital use of talcum powder to increased</p> <p>2 risk of epithelial ovarian cancer?</p> <p>3 A. So when a substance induces CA-125, CA-125</p> <p>4 is a marker for inflammation. If a substance is able</p> <p>5 to induce a marker of inflammation, and we know that</p> <p>6 inflammation in this specific marker is a marker for</p> <p>7 ovarian cancer, then we conclude that it is a molecular</p> <p>8 basis to that.</p> <p>9 Q. Can you cite for me any studies correlating</p> <p>10 elevations in CA-125 levels in patients who do not have</p> <p>11 ovarian cancer to ovarian cancer risk?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: Say that again,</p> <p>14 please.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Sure. Can you cite for me any published</p> <p>17 studies correlating elevations in CA-125 levels in</p> <p>18 women who do not have ovarian cancer to ovarian</p> <p>19 cancer -- to risk of ovarian cancer?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. In other words, showing an association</p> <p>23 between elevated CA-125 levels and the risk of ovarian</p> <p>24 cancer?</p> <p>25 A. Yeah, yeah.</p>
<p style="text-align: right;">Page 472</p> <p>1 MS. O'DELL: It's Exhibit 25 -- 3,</p> <p>2 excuse me.</p> <p>3 THE WITNESS: Thank you.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. You report that you used talc from</p> <p>6 Sigma-Aldrich; is that correct?</p> <p>7 A. No.</p> <p>8 Q. Where did your talc come from?</p> <p>9 A. Fisher. This is Fisher. Sigma-Aldrich is</p> <p>10 from the south cell line.</p> <p>11 Q. So that's a mistake, correct?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. Is it a mistake?</p> <p>15 A. I think this was trying to refer to ATCC</p> <p>16 cells, where we got them from, the cell lines that we</p> <p>17 used.</p> <p>18 Q. In the Conclusion section, you say that this</p> <p>19 will provide a molecular basis to previous reports that</p> <p>20 linked genital use of talcum powder to increased risk</p> <p>21 of epithelial ovarian cancer. Do you see where I'm</p> <p>22 reading?</p> <p>23 A. Yes.</p> <p>24 Q. How will those results -- or how did those</p> <p>25 results provide a molecular basis to previous reports</p>	<p style="text-align: right;">Page 474</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I'm not -- I'm not --</p> <p>3 this is not my specialty. I would defer this to an</p> <p>4 OB/GYN oncologist. But what I know, my interest here,</p> <p>5 anything that induces inflammation is what I'm</p> <p>6 interested in. In my mind, anything that induces</p> <p>7 inflammation is associated with increased risk based on</p> <p>8 the data that we've shown.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. Can you cite for me any published studies</p> <p>11 correlating increased levels of CA-125 with ovarian</p> <p>12 cancer risk?</p> <p>13 MS. O'DELL: Objection, asked and</p> <p>14 answered.</p> <p>15 THE WITNESS: It is correlated</p> <p>16 with -- with inflammation, it's correlated with the</p> <p>17 pathogenesis of ovarian cancer.</p> <p>18 BY MR. HEGARTY:</p> <p>19 Q. Can you cite for me any studies that say</p> <p>20 that?</p> <p>21 A. Pathogenesis?</p> <p>22 Q. No, that it's correlated with inflammation?</p> <p>23 MS. O'DELL: Object to form.</p> <p>24 THE WITNESS: I'm talking about</p> <p>25 inflammation --</p>

<p style="text-align: right;">Page 475</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. Correct.</p> <p>3 A. -- not CA-125. As I told you, CA-125 I'm</p> <p>4 not an expert in. This for a -- I defer this to an</p> <p>5 oncologist -- OB/GYN oncologist. But what I'm saying</p> <p>6 is very clear. Anything that induces inflammation, and</p> <p>7 specifically inflammation that is linked to pathogens</p> <p>8 is ovarian cancer.</p> <p>9 Q. For this abstract, did you include any</p> <p>10 conflict of interest disclosure?</p> <p>11 A. What abstract is this?</p> <p>12 Q. The abstract Number 25, Exhibit Number 25.</p> <p>13 A. You don't need to include any conflict of</p> <p>14 interest for any SRI abstract.</p> <p>15 Q. Okay. Next, would you find Exhibit 26,</p> <p>16 which we previously marked as -- which is the F-098</p> <p>17 abstract? It was previously marked as 26.</p> <p>18 A. I don't have it.</p> <p>19 Q. I just saw it there I think.</p> <p>20 A. Where?</p> <p>21 Q. Right there.</p> <p>22 A. Sorry.</p> <p>23 Q. In the Method section of that abstract, you</p> <p>24 again report using talc from Sigma-Aldrich; is that</p> <p>25 correct?</p>	<p style="text-align: right;">Page 477</p> <p>1 Q. Fair point. Did you include a conflict of</p> <p>2 interest disclosure with this abstract?</p> <p>3 A. This is SRI?</p> <p>4 Q. Correct.</p> <p>5 A. They do not require that.</p> <p>6 Q. I'm sorry. This is Reproductive Sciences.</p> <p>7 A. SRI.</p> <p>8 DEPOSITION EXHIBIT 28</p> <p>9 Correspondence From the FTO</p> <p>10 WAS MARKED BY THE REPORTER</p> <p>11 FOR IDENTIFICATION</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. I'm going to next mark as Exhibit 28</p> <p>14 correspondence from the FTO regarding the 50th Annual</p> <p>15 Meeting on Women's Cancer in March 2019. Do you see</p> <p>16 that?</p> <p>17 A. This is -- this is the -- the poster work we</p> <p>18 are going to present in Honolulu, yes.</p> <p>19 MS. O'DELL: I think you said 2019.</p> <p>20 THE WITNESS: Yeah.</p> <p>21 MS. O'DELL: But I want to be clear</p> <p>22 on what the question is.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. Have you prepared that poster?</p> <p>25 A. It's a March 16, 2019.</p>
<p style="text-align: right;">Page 476</p> <p>1 A. Again --</p> <p>2 MS. O'DELL: Object to form.</p> <p>3 THE WITNESS: -- this refers to the</p> <p>4 cell lines. The talc we used for this abstract was</p> <p>5 from Fisher.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. There's a reference from using a cell line</p> <p>8 MDAH dash 2774. Do you see that?</p> <p>9 A. Using MDAH-2774.</p> <p>10 Q. Yes.</p> <p>11 A. Yes.</p> <p>12 Q. Why did you not use that cell line for your</p> <p>13 manuscript?</p> <p>14 A. Which one we used for the manuscript, let me</p> <p>15 see. Oh, we used A2780 instead. I think that was not</p> <p>16 available when we did the manuscript. This is 2017</p> <p>17 work.</p> <p>18 Q. Did you include a -- a conflict of interest</p> <p>19 disclosure with this manuscript, F dash 098?</p> <p>20 MS. O'DELL: Object to form.</p> <p>21 THE WITNESS: That's not a</p> <p>22 manuscript.</p> <p>23 BY MR. HEGARTY:</p> <p>24 Q. I'm sorry.</p> <p>25 A. That's an abstract.</p>	<p style="text-align: right;">Page 478</p> <p>1 Q. Right. Have you prepared that poster?</p> <p>2 A. Yes.</p> <p>3 Q. Do you have a copy of it?</p> <p>4 A. No.</p> <p>5 Q. Well, I asked you if you prepared it, and</p> <p>6 you said yes.</p> <p>7 A. Yeah, Amy prepared it, Dr. Harper.</p> <p>8 Q. Did -- did Amy prepare a poster for this</p> <p>9 meeting?</p> <p>10 A. I said yes.</p> <p>11 Q. And do you have a copy of it in your office?</p> <p>12 A. Here now?</p> <p>13 Q. Here now.</p> <p>14 A. Here now, no.</p> <p>15 Q. Do you have a copy in your office?</p> <p>16 A. Do I have a copy in my office? Yes.</p> <p>17 Q. This presentation is to be about --</p> <p>18 A. It's not -- for the record, the copy is not</p> <p>19 complete yet.</p> <p>20 Q. This presentation is for your manuscript; is</p> <p>21 that correct?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: Not correct.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. What is it for?</p>

<p style="text-align: right;">Page 479</p> <p>1 A. It's -- this is only for the -- if I 2 remember correctly, this is only for the -- the SNP 3 analysis. 4 Q. The SNP analysis that's reported in your 5 manuscript? 6 A. Correct. Part of the manuscript. 7 Q. And Dr. Harper is planning to present at 8 this meeting? 9 A. Correct. 10 DEPOSITION EXHIBIT 29 11 Correspondence Regarding SGO Meeting 12 WAS MARKED BY THE REPORTER 13 FOR IDENTIFICATION 14 BY MR. HEGARTY: 15 Q. I'm going to next mark as Exhibit 29 another 16 document we've been provided, which is correspondence 17 regarding the same SGO meeting; is that correct? 18 A. For submission for the abstract, yes. 19 Q. This is an e-mail from Lynette Kelley dated 20 January 29, 2019? 21 A. Correct. 22 Q. This e-mail refers to your inquiry 23 on the completed disclosure. Do you see that first 24 line? 25 A. I do.</p>	<p style="text-align: right;">Page 481</p> <p>1 says regarding your inquiry? 2 A. Correct. I picked up the phone and I called 3 her to confirm it. 4 DEPOSITION EXHIBIT 30 5 Correspondence Regarding the 50th 6 Annual SGO Meeting 7 WAS MARKED BY THE REPORTER 8 FOR IDENTIFICATION 9 BY MR. HEGARTY: 10 Q. I'm next marking as Exhibit 30 -- 11 A. I'm sorry. 12 Q. -- further correspondence regarding the 13 50th Annual HGO meeting -- SGO meeting. Do you see 14 that, Doctor? 15 A. Yes. That's to Amy, yes. 16 Q. This correspondence dates back to 17 September 12th, 2018, correct? 18 A. It says so, yes. 19 Q. Are you a member of SGO? 20 A. Yes. 21 DEPOSITION EXHIBIT 31 22 Correspondence to Ms. Thompson at 23 Beasley Allen Regarding an SGO Abstract 24 WAS MARKED BY THE REPORTER 25 FOR IDENTIFICATION</p>
<p style="text-align: right;">Page 480</p> <p>1 Q. Where is the disclosure that you provided? 2 A. Where is the disclosure? 3 Q. Well, this indicates you provided to SGO a 4 disclosure; is that correct? 5 A. It is online. 6 Q. The e-mail says, notes since you have no 7 financial ties with the commercial entity, there is 8 nothing for you to disclose. Do you see where I'm 9 reading? 10 A. I do. 11 Q. Do you know what she means by that 12 statement? 13 A. Yes. Because in the disclosure form it says 14 if you have a conflict of interest, yes or no, and it 15 indicates specifically that -- that what they like to 16 see in the conflict of interest is a commercial -- 17 financial interest from commercial companies that they 18 are working with you to develop drugs or to develop 19 products. I told them about Beasley Allen 20 specifically, and they said no, you don't have to, 21 that's not a conflict of interest. 22 Q. When you -- when you say you told them, you 23 talked about you told Lynette Kelly? 24 A. Yeah, yes, I talked to her. 25 Q. This is what she's referring to when she</p>	<p style="text-align: right;">Page 482</p> <p>1 BY MR. HEGARTY: 2 Q. I've next marked as Exhibit 31 3 correspondence from you to Ms. Thompson at 4 Beasley Allen regarding an SGO abstract, correct? 5 A. What is this? 6 Q. At the very top it says, Subject, SGO 7 Abstract. 8 A. SGO Abstract. I see it written, but 9 I'm trying to remember what -- which one is 10 this. 11 Q. Well, is this the abstract for the SGO 12 meeting? 13 A. Is it? I don't know. I can't remember. 14 Let's see. Do you have the abstract for the SGO 15 meeting? 16 Q. This is all we have, Doctor. 17 A. We have an abstract. This is missing. Do 18 we -- oh, oh, sorry. It's right here. Okay. What 19 about this? 20 Q. Why did you communicate with Ms. Thompson 21 regarding this abstract? 22 A. Why not? I work for them. They -- they pay 23 for my time. 24 MS. O'DELL: Excuse me, wait a 25 minute.</p>

<p style="text-align: right;">Page 483</p> <p>1 THE WITNESS: What's wrong?</p> <p>2 MS. O'DELL: Object to any inquiry</p> <p>3 that relates to communications with counsel, so I</p> <p>4 instruct you not to divulge communications with</p> <p>5 counsel.</p> <p>6 MR. LAPINSKI: Let me see that.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. At the very end of the abstract,</p> <p>9 Doctor --</p> <p>10 A. Here?</p> <p>11 Q. -- Exhibit 31, where it talks about the</p> <p>12 first presenting author, it says, will not be</p> <p>13 published. What does that mean?</p> <p>14 A. I don't know.</p> <p>15 Q. Okay. You do intend to publish part of this</p> <p>16 data, correct?</p> <p>17 A. This is already accepted and published.</p> <p>18 Q. So why is she saying that --</p> <p>19 A. Who is "she"? I don't know where this is</p> <p>20 coming from.</p> <p>21 Q. Let me finish my question. Why does it say</p> <p>22 will not be published?</p> <p>23 A. Hold on one second. Abstract -- this is</p> <p>24 from me -- I have no idea why it says that, because we</p> <p>25 submitted it and it's accepted. It's published. When</p>	<p style="text-align: right;">Page 485</p> <p>1 March 2019, correct?</p> <p>2 A. Correct.</p> <p>3 Q. For what study does this relate to?</p> <p>4 A. This -- this particular one, Talcum Powder</p> <p>5 Enhances Key Mechanism of Ovarian Cancer, Development</p> <p>6 and Progression.</p> <p>7 Q. Is this the same subject as your</p> <p>8 manuscript?</p> <p>9 A. Part of it, yes.</p> <p>10 Q. Has this been accepted?</p> <p>11 A. Yes, and I'm going to present it.</p> <p>12 Q. Has there been any further communication</p> <p>13 with this group about this presentation, beyond what we</p> <p>14 look at here?</p> <p>15 A. This group who? SRI?</p> <p>16 Q. The SRI?</p> <p>17 A. No. We just get an acceptance letter.</p> <p>18 Q. Have you prepared the abstract yet?</p> <p>19 A. Not yet. You mean the poster?</p> <p>20 Q. Well, the poster or the abstract?</p> <p>21 A. That's already been submitted.</p> <p>22 Q. Do you have a copy of the abstract?</p> <p>23 A. You should have it somewhere. It's an</p> <p>24 abstract.</p> <p>25 Q. Well, I don't think we do, but you think</p>
<p style="text-align: right;">Page 484</p> <p>1 it's accepted, it's published.</p> <p>2 Q. Dr. Harper is a fellow; is that correct?</p> <p>3 A. Oh, now I remember. Yes, yes.</p> <p>4 Q. Okay. You said you remember?</p> <p>5 A. Yeah, yeah. You know where they -- I think,</p> <p>6 I'm not quite sure, but I think when they have the</p> <p>7 e-mail where they say confidential, whatever, whatever,</p> <p>8 I think that's part of it.</p> <p>9 You know, some e-mails they have</p> <p>10 everything in this e-mail is confidential, and it's</p> <p>11 like -- it reads like that, but maybe this is part of</p> <p>12 it. I don't know what the answer is. But it is going</p> <p>13 to be published. It is already accepted, and it's</p> <p>14 going to be presented.</p> <p>15 DEPOSITION EXHIBIT 32</p> <p>16 Abstract Submission to the 66th Annual</p> <p>17 Scientific Meeting For the Society of</p> <p>18 Reproductive Investigation in Paris March</p> <p>19 2019</p> <p>20 WAS MARKED BY THE REPORTER</p> <p>21 FOR IDENTIFICATION</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. Next I've marked as Exhibit 32 an abstract</p> <p>24 submission to the 66th Annual Scientific Meeting for</p> <p>25 the Society of Reproductive Investigation in Paris in</p>	<p style="text-align: right;">Page 486</p> <p>1 there is a copy of the abstract?</p> <p>2 A. What we submitted to SRI, I think you should</p> <p>3 have a copy. You should have a copy, yeah. But it's</p> <p>4 accepted.</p> <p>5 Q. Next I want to ask you about this -- this</p> <p>6 document we initially -- we already marked, which is</p> <p>7 the submission of a manuscript to Gynecologic Oncology.</p> <p>8 Can you find that, please?</p> <p>9 MS. O'DELL: Exhibit 27?</p> <p>10 MR. HEGARTY: Exhibit 27.</p> <p>11 THE WITNESS: Okay.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. This submission includes at the bottom,</p> <p>14 suggested reviewers. Do you see that?</p> <p>15 A. Yes.</p> <p>16 Q. Were -- are these reviewers you suggested?</p> <p>17 A. Yes. They ask you to.</p> <p>18 Q. Have you communicated with these reviewers</p> <p>19 about your manuscript?</p> <p>20 A. No.</p> <p>21 Q. If you turn to the -- turn to page 13 of</p> <p>22 this -- of the manuscript, please.</p> <p>23 A. References?</p> <p>24 Q. No, at the top, conflict of interest. You</p> <p>25 reported that you have no conflict of interest to</p>

<p style="text-align: right;">Page 487</p> <p>1 disclose -- to declare; is that correct?</p> <p>2 A. Correct.</p> <p>3 Q. So there you made no reference to your</p> <p>4 serving as a consulting expert for Plaintiffs in the</p> <p>5 talc litigation, correct?</p> <p>6 A. We didn't think we needed to do it.</p> <p>7 Q. Why did you think you didn't need to?</p> <p>8 A. I -- because we don't think that this is a</p> <p>9 commercial conflict of interest because I did the</p> <p>10 work in my lab, and I paid for it from my discretion</p> <p>11 fund, and everything from that, it's another paper for</p> <p>12 me, and I'm not gaining any special financial interest</p> <p>13 from it, other than it looks like any other paper I</p> <p>14 have.</p> <p>15 Q. This manuscript reported results for</p> <p>16 48 hours. Why did you change from 48 hours to</p> <p>17 reporting 72 hours?</p> <p>18 A. Yeah. You asked me this question</p> <p>19 previously, and I told you every 48 hours will be</p> <p>20 corrected to 72 hours.</p> <p>21 Q. So in the manuscript -- so in this</p> <p>22 manuscript submission, the reference to 48 should be</p> <p>23 to 72?</p> <p>24 A. We fixed it in the SRI manuscript to</p> <p>25 72 hours. All the work was done at 72 hours.</p>	<p style="text-align: right;">Page 489</p> <p>1 A. Which one are you talking about?</p> <p>2 Q. 34.</p> <p>3 A. Yes. It's an automated e-mail. Yes, what</p> <p>4 about it?</p> <p>5 Q. This is just an -- this is an e-mail</p> <p>6 advising you that your manuscript has got a number,</p> <p>7 correct?</p> <p>8 A. That's the same e-mail like this one. I got</p> <p>9 a number, yes. Number --</p> <p>10 DEPOSITION EXHIBIT 35</p> <p>11 Final Decision, Rejection of Manuscript</p> <p>12 WAS MARKED BY THE REPORTER</p> <p>13 FOR IDENTIFICATION</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. I've next marked as Exhibit Number 35 what's</p> <p>16 entitled at the top Final Decision. This is the</p> <p>17 rejection of your manuscript by Gynecologic Oncology;</p> <p>18 is that correct?</p> <p>19 A. This is the review results of my, yeah,</p> <p>20 Gynecology Oncology manuscript.</p> <p>21 Q. Included within this document are the</p> <p>22 reviewer comments, correct?</p> <p>23 A. Correct.</p> <p>24 Q. Did you provide any response to the reviewer</p> <p>25 comments?</p>
<p style="text-align: right;">Page 488</p> <p>1 DEPOSITION EXHIBIT 33</p> <p>2 Notification of Submission to</p> <p>3 Gynecologic Oncology</p> <p>4 WAS MARKED BY THE REPORTER</p> <p>5 FOR IDENTIFICATION</p> <p>6 MS. O'DELL: Did you put a number on</p> <p>7 that?</p> <p>8 MR. HEGARTY: Yes.</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. I've next marked as Exhibit 33 the</p> <p>11 notification of your submission to Gynecologic</p> <p>12 Oncology, correct?</p> <p>13 A. Correct.</p> <p>14 DEPOSITION EXHIBIT 34</p> <p>15 Notification From Gynecologic Oncology</p> <p>16 WAS MARKED BY THE REPORTER</p> <p>17 FOR IDENTIFICATION</p> <p>18 MS. O'DELL: Did you just mark</p> <p>19 another exhibit?</p> <p>20 MR. HEGARTY: Yes.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. I've next marked as Exhibit Number 34 a</p> <p>23 notification you received from Gynecologic Oncology</p> <p>24 where you get your -- your paper was assigned a</p> <p>25 manuscript number; is that correct?</p>	<p style="text-align: right;">Page 490</p> <p>1 A. No. Response to this manuscript -- to this</p> <p>2 journal?</p> <p>3 Q. Correct.</p> <p>4 A. No.</p> <p>5 Q. Was this the last communication you had with</p> <p>6 Gynecologic Oncology regarding your manuscript?</p> <p>7 A. This is --</p> <p>8 Q. 35?</p> <p>9 A. Yes.</p> <p>10 DEPOSITION EXHIBIT 36</p> <p>11 Manuscript to Reproductive Sciences,</p> <p>12 Submission Date of January 3, 2019</p> <p>13 WAS MARKED BY THE REPORTER</p> <p>14 FOR IDENTIFICATION</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. I've next marked as 36 a copy of your</p> <p>17 manuscript we received from Plaintiffs' counsel last</p> <p>18 week. This is the manuscript to Reproductive Sciences</p> <p>19 with a submission date at the very first page of</p> <p>20 January 3, 2019, correct?</p> <p>21 A. Correct.</p> <p>22 DEPOSITION EXHIBIT 37</p> <p>23 Reproductive Sciences,</p> <p>24 Submission Date of January 3, 2019</p> <p>25 WAS MARKED BY THE REPORTER</p>

<p style="text-align: right;">Page 491</p> <p>1 FOR IDENTIFICATION</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. I've next marked as Exhibit 37 another</p> <p>4 document we received from Plaintiffs' counsel last</p> <p>5 week, which appears to be another copy of the same</p> <p>6 document?</p> <p>7 A. Yes, it's the same. They look the same.</p> <p>8 DEPOSITION EXHIBIT 38</p> <p>9 Manuscript with Submission Date</p> <p>10 of October 10, 2018</p> <p>11 WAS MARKED BY THE REPORTER</p> <p>12 FOR IDENTIFICATION</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. I'm marking next as Exhibit 38 a copy of a</p> <p>15 document received late last night from Plaintiffs'</p> <p>16 counsel, which appears to be a manuscript with a</p> <p>17 submission date on the very first page of October 10,</p> <p>18 2018. Do you see that, Doctor?</p> <p>19 A. Yes, I do.</p> <p>20 Q. Does this -- does Exhibit 38 represent the</p> <p>21 initial submission of your manuscript to Reproductive</p> <p>22 Sciences?</p> <p>23 A. Correct.</p> <p>24 Q. Did you submit this manuscript with any type</p> <p>25 of cover letter?</p>	<p style="text-align: right;">Page 493</p> <p>1 A. Page 13?</p> <p>2 Q. Correct.</p> <p>3 A. Okay.</p> <p>4 Q. If you look at the conflict of interest</p> <p>5 section, you state, the authors declare that there is</p> <p>6 no conflicts of interest, correct?</p> <p>7 A. That's what it says, yes.</p> <p>8 Q. But in your current manuscript, you do</p> <p>9 disclose a conflict of interest. Why did you change</p> <p>10 between your initial submission and your current</p> <p>11 version?</p> <p>12 A. Yeah. This was submitted by Dr. Harper, and</p> <p>13 when this -- the manuscript came back with -- with the</p> <p>14 revisions, I revised it according to the reviewer</p> <p>15 comments, and I noticed that there is a mistake in the</p> <p>16 conflict of interest, I added it, because we really</p> <p>17 don't believe that we have a conflict of interest.</p> <p>18 That's the idea.</p> <p>19 Q. When you say we, who are you talking about?</p> <p>20 A. The lab, our lab. We don't believe, because</p> <p>21 we -- this is lab work from our lab, financed by our</p> <p>22 lab.</p> <p>23 DEPOSITION EXHIBIT 39</p> <p>24 Correspondence with Reproductive Sciences</p> <p>25 Regarding Manuscript</p>
<p style="text-align: right;">Page 492</p> <p>1 A. I think so, yes. You should have it.</p> <p>2 Q. You think there is a cover letter?</p> <p>3 A. Yes.</p> <p>4 Q. I've not seen that cover letter, so I don't</p> <p>5 think we have it.</p> <p>6 MS. O'DELL: I don't have it.</p> <p>7 THE WITNESS: No? This is --</p> <p>8 BY MR. HEGARTY:</p> <p>9 Q. If you would turn over to page 13 of this</p> <p>10 document.</p> <p>11 A. Can you give me one minute -- one second,</p> <p>12 please?</p> <p>13 Q. Sure, go ahead.</p> <p>14 A. I just want to see. I'm not sure. I can't</p> <p>15 remember. Actually, Dr. Harper submitted this, so I</p> <p>16 don't remember. I'll take my answer.</p> <p>17 Q. How can you tell that Dr. Harper submitted</p> <p>18 this?</p> <p>19 A. Because I instructed her -- I instructed her</p> <p>20 to do so.</p> <p>21 Q. Do you know whether she included a cover</p> <p>22 letter?</p> <p>23 A. That's what I'm saying, I'm not sure.</p> <p>24 Q. If you turn over to page 13 of Exhibit 38,</p> <p>25 please.</p>	<p style="text-align: right;">Page 494</p> <p>1 WAS MARKED BY THE REPORTER</p> <p>2 FOR IDENTIFICATION</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. I'm next marking as Exhibit 39 --</p> <p>5 MS. O'DELL: I'm sorry, could you</p> <p>6 pass one this way? These are --</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. -- a copy of correspondence with</p> <p>9 Reproductive Sciences regarding your manuscript,</p> <p>10 correct?</p> <p>11 A. Yes.</p> <p>12 DEPOSITION EXHIBIT 40</p> <p>13 Response to Reviewer Comments</p> <p>14 WAS MARKED BY THE REPORTER</p> <p>15 FOR IDENTIFICATION</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. I'm going to next mark as Exhibit 40 a copy</p> <p>18 of another document received late last night. Would</p> <p>19 you tell me what Exhibit 40 is?</p> <p>20 MR. HEGARTY: I'm not going to give</p> <p>21 you a copy, since you gave it to us late last night,</p> <p>22 and I only have two copies.</p> <p>23 THE WITNESS: So this is the --</p> <p>24 MS. O'DELL: Why don't you let me</p> <p>25 see it first so --</p>

<p style="text-align: right;">Page 495</p> <p>1 THE WITNESS: Yeah, this is my 2 response. 3 BY MR. HEGARTY: 4 Q. Your response to their comments? 5 A. To the -- to the reviewer comments. 6 Q. Is this the only response that you prepared 7 to the reviewer comments? 8 A. Correct. 9 MS. O'DELL: Other than the 10 resubmitted manuscript, which he's testified to? 11 THE WITNESS: Yeah, that's the 12 response, yes. 13 DEPOSITION EXHIBIT 41 14 Correspondence with Reproductive Sciences 15 Regarding Manuscript 16 WAS MARKED BY THE REPORTER 17 FOR IDENTIFICATION 18 BY MR. HEGARTY: 19 Q. I've marked next as Exhibit 41 additional 20 correspondence you had with Reproductive Sciences 21 regarding your manuscript, correct? 22 A. They sent me this e-mail, yes. This is an 23 automated e-mail sent to everybody. 24 DEPOSITION EXHIBIT 42 25 Chart of SNP Data</p>	<p style="text-align: right;">Page 497</p> <p>1 BY MR. HEGARTY: 2 Q. I've marked next as Exhibit 44 a document 3 titled, The Role of Talc Powder Exposure in Ovarian 4 Cancer, Mechanistic Approach. Do you see that? 5 A. Yes. 6 Q. Is this the budget document you mentioned at 7 your last deposition? 8 A. Yes. 9 Q. Who prepared this? 10 A. I did. 11 Q. When was it prepared? 12 A. September. Middle of September. 13 Q. Of 2018? 14 A. '17. 15 Q. Of 2017. Why did you prepare this? 16 A. To see how much this project would cost me 17 if I want to do it. 18 Q. Was this document requested by someone? 19 A. No. 20 Q. Did someone ask you to prepare it? 21 A. No. 22 Q. Who did you prepare this for? 23 A. For me, for my lab. 24 Q. Did you give this document to anybody? 25 A. This document, I gave it to Beasley Allen.</p>
<p style="text-align: right;">Page 496</p> <p>1 WAS MARKED BY THE REPORTER 2 FOR IDENTIFICATION 3 BY MR. HEGARTY: 4 Q. I'm marking next as Exhibit 42 a chart we 5 were provided by counsel for Plaintiffs. What is this 6 chart? 7 A. This is the SNP data. 8 Q. The SNP data for your manuscript? 9 A. For my -- for my manuscript, and for the 10 poster that we're going to submit, to -- to present. 11 DEPOSITION EXHIBIT 43 12 E-Mail from Sharon Pepe 13 WAS MARKED BY THE REPORTER 14 FOR IDENTIFICATION 15 BY MR. HEGARTY: 16 Q. I've marked -- marking next as Exhibit 43 a 17 copy we received last time at your deposition, which is 18 an e-mail from Sharon Pepe regarding the cost of your 19 testing, your experiments, correct? 20 A. Correct. 21 DEPOSITION EXHIBIT 44 22 The Role of Talc Powder Exposure in Ovarian 23 Cancer, Mechanistic Approach 24 WAS MARKED BY THE REPORTER 25 FOR IDENTIFICATION</p>	<p style="text-align: right;">Page 498</p> <p>1 Q. Would you turn to the second page of this 2 document, please? With regard to Aim I, did you 3 perform the tests described in Aim I? 4 A. It was just a proposal. 5 Q. Did you actually perform the tests? 6 A. No. My -- that was my plan, my thinking. 7 Q. Your initial thinking said you -- strike 8 that. You noted with regard to Aim I that you intended 9 to expose cells to increasing doses of talc of 100, 200 10 and 500, correct? 11 A. That's what it says. 12 Q. You also noted that you intended to test a 13 number of markers. When you ultimately did your 14 manuscript, you did not test NADPH, Nox2 and Nox4, GST 15 and 8-OHdG. Why did you not do those tests -- 16 MS. O'DELL: Object to form. 17 THE WITNESS: I think the 18 activity -- 19 BY MR. HEGARTY: 20 Q. Other than GST? 21 A. Yeah. 22 Q. Why did you not do the others? 23 A. Financial. I mean, they're all the same. 24 If you do one, so maybe enough to do -- you don't have 25 to do all the oxidated stress marker. You can pick the</p>

<p>Page 499</p> <p>1 most key one, and it's financial basically.</p> <p>2 Q. What was your methodology for picking the</p> <p>3 markers that you did?</p> <p>4 A. The one we published most with, the</p> <p>5 technology available.</p> <p>6 Q. Have you not published on any -- on NA --</p> <p>7 NADPH, Nox2 and Nox4 and 8-OHdG?</p> <p>8 MS. O'DELL: Object to form.</p> <p>9 THE WITNESS: We -- we did publish</p> <p>10 some paper with NADPH oxidase, yes.</p> <p>11 BY MR. HEGARTY:</p> <p>12 Q. Why did you not include that marker?</p> <p>13 A. As I said, financial.</p> <p>14 Q. When you say financial, what do you mean?</p> <p>15 A. Money, cost.</p> <p>16 Q. It costs more to include it?</p> <p>17 A. It costs more to include it.</p> <p>18 Q. Is there some publication where you can go</p> <p>19 to, to determine what the key markers are to do in a</p> <p>20 test like this?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: It's a practice in our</p> <p>23 lab that we use pro-oxidant as myeloperoxidase, iNOS,</p> <p>24 nitrite, nitrate, and anti-oxidant as SOD, catalase,</p> <p>25 and glutathiones. So just a normal -- it's a -- it's</p>	<p>Page 501</p> <p>1 A. After this?</p> <p>2 Q. After this.</p> <p>3 A. Yes.</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: That's what we</p> <p>6 submitted to SRI.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. And how much time -- total time did it take</p> <p>9 to execute what you eventually did do?</p> <p>10 A. I cannot remember.</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: I cannot remember.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. If you look at Aim II, do you see that?</p> <p>15 A. Yes.</p> <p>16 Q. If you turn over to the next page over, the</p> <p>17 carryover paragraph on the next page at the top --</p> <p>18 A. Yes.</p> <p>19 Q. -- you report the intent to look at a number</p> <p>20 of SNPs, and then you list those that include SNPs for</p> <p>21 BRCA1 and BRCA2. Do you see that?</p> <p>22 A. I do, correct.</p> <p>23 Q. You did not do those tests, correct?</p> <p>24 A. Correct.</p> <p>25 Q. Why not?</p>
<p>Page 500</p> <p>1 a -- a practice that we use in the lab.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. If you look at the very end of part -- end</p> <p>4 of the part of Aim I, it says, we hope to accomplish</p> <p>5 this aim by October 10th in order to submit our</p> <p>6 findings to our premier society, Society of</p> <p>7 Reproductive Investigation, SRI. Do you see that?</p> <p>8 A. Yes.</p> <p>9 Q. You did ultimately submit some findings to</p> <p>10 SRI, correct?</p> <p>11 A. Correct.</p> <p>12 Q. The -- the description below the text says</p> <p>13 the estimated time to execute this aim is four weeks.</p> <p>14 Do you see that?</p> <p>15 A. Where do you see that?</p> <p>16 Q. (Gesturing).</p> <p>17 A. Yes.</p> <p>18 Q. You did do some of the tests that are</p> <p>19 described in Aim I, correct?</p> <p>20 A. When?</p> <p>21 Q. You did some of the tests described with</p> <p>22 different dosages that you talk about in Aim I,</p> <p>23 correct?</p> <p>24 A. Right, but when? When are you referring to?</p> <p>25 Q. At any point in time?</p>	<p>Page 502</p> <p>1 A. Expenses.</p> <p>2 Q. When you say expenses, were you told not to</p> <p>3 do them by somebody?</p> <p>4 A. Told, no. This is just more money to do it.</p> <p>5 And -- and unnecessary to do it.</p> <p>6 Q. Why did you propose to do it in the first</p> <p>7 place?</p> <p>8 A. Because if you have -- if I have to choose</p> <p>9 between oxidative -- BRCA1 and BRCA2 are not oxidative</p> <p>10 stress markers. They're just -- they can have clinical</p> <p>11 value when you interpret the data using patient with</p> <p>12 BRCA1 mutation versus patient without BRCA1 mutation.</p> <p>13 Q. Why did you propose to do it in the first</p> <p>14 place then?</p> <p>15 A. I just told you.</p> <p>16 Q. Why is that?</p> <p>17 A. Because when you interpret the data, okay,</p> <p>18 some data -- some response of patients with</p> <p>19 BRCA1 negative versus BRCA1 positive, they're</p> <p>20 different outcome. So this will help in interpret the</p> <p>21 data.</p> <p>22 Q. The reason you didn't test those SNPs was</p> <p>23 because of expense, correct?</p> <p>24 A. Yes.</p> <p>25 MS. O'DELL: Object to the form.</p>

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1 BY MR. HEGARTY:

2 Q. If you look at Aim III --

3 A. You're talking about BRCA1?

4 Q. I'm talking about BRCA1 and BRCA2.

5 A. Yes.

6 Q. If you look at Aim III, none of those
7 tests -- strike that. Under Aim III, you have done
8 none of those tests, correct?

9 A. Not correct.

10 Q. Well, the Aim III includes looking
11 at normal ovarian epithelial cell lines treated
12 with talc that will be washed and suspended in agar
13 at 500 cells per well and layered on a top of a base of
14 20 percent agar in a 96 well plate. Did you do that
15 test?

16 A. No.

17 Q. Why did you not do that test?

18 A. What's the right word. Expense. Is that
19 the word.

20 Q. Did you do any of the tests described in
21 Aim III?

22 A. Yes, I did.

23 Q. For purpose of your manuscript?

24 A. Yes, I did.

25 Q. Which one?

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1 A. Apoptosis and proliferation.

2 Q. Where is that described?

3 A. Apoptosis, all the way down.

4 MR. LAPINSKI: Dr. Saed, just make
5 sure you keep your voice up.

6 THE WITNESS: Oh, sorry. All the
7 way down.

8 BY MR. HEGARTY:

9 Q. Show me where.

10 A. In bold, you see it, apoptosis.

11 Q. But isn't -- but aren't the -- isn't the
12 analysis for apoptosis to be taken from the cells
13 suspended in agar?

14 A. No.

15 MS. O'DELL: Object to form.

16 BY MR. HEGARTY:

17 Q. Where do you describe in Aim III the testing
18 that you said you did for apoptosis?

19 MS. O'DELL: Object to form.

20 THE WITNESS: We're -- yes. We're
21 really confusing the questions. Okay. One at a time.
22 Which one you want me to answer first?

23 BY MR. HEGARTY:

24 Q. Well, let me --

25 A. Yes, please.

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1 Q. -- let me make sure that I'm clear. You're
2 describing here evaluating apoptosis using cells in
3 agar, correct?

4 MS. O'DELL: Object to the form.

5 THE WITNESS: This is a proposal. I
6 don't have to do everything I said in the proposal,
7 okay. I -- I propose to do transformation assays, and
8 then after I do the transformation assays, I will do
9 apoptosis. That's what I propose to do.

10 BY MR. HEGARTY:

11 Q. You did --

12 A. But I did --

13 Q. I'm sorry. Go ahead.

14 A. But I did -- I did apoptosis because I don't
15 want to go through all the expenses doing all this
16 experiment, and the normal ovarian primary -- primary
17 normal ovarian cells are very, very limited, very hard
18 to grow, so it takes more money, more time, more effort
19 to grow them and to do them, and you cannot do this
20 test with immortalized.

21 Q. You did not evaluate in your manuscript
22 apoptosis using the method described in Aim III,
23 correct?

24 MS. O'DELL: Object to the form.

25 THE WITNESS: One question again,

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1 I'm sorry.

2 BY MR. HEGARTY:

3 Q. Doctor --

4 A. I don't understand what you're saying.

5 Q. You describe in Aim III a method using cells
6 suspended in agar that -- from which you're going to
7 test for apoptosis, correct?

8 MS. O'DELL: Object to the form.

9 THE WITNESS: Not correct.

10 BY MR. HEGARTY:

11 Q. How is that not correct?

12 A. This is a proposal. Again, this is a
13 proposal to do. My proposal was to take normal
14 epithelial cells primary to that assay and look for
15 transformation and then check for apoptosis in --
16 period. In my manuscript, I chose to do apoptosis on
17 the immortalized cells treated with the talc powder.
18 Does that make sense?

19 Q. You chose to do a different method to
20 evaluate apoptosis?

21 A. No, I did not say that.

22 Q. Well, this method says you were going to
23 extract samples from the cells suspended in agar and
24 test those for apoptosis, correct?

25 A. I didn't do this in my manuscript. Is that

<p style="text-align: right;">Page 507</p> <p>1 what you're saying?</p> <p>2 Q. Yes.</p> <p>3 A. No, I did not.</p> <p>4 Q. Okay. That was my question.</p> <p>5 A. I did apoptosis part of it.</p> <p>6 Q. Understood.</p> <p>7 A. In a different cell line.</p> <p>8 Q. Correct.</p> <p>9 A. Yes, thank you. I like that.</p> <p>10 Q. Now, this -- the test you described in</p> <p>11 Aim I -- I'm sorry. The test you described in Aim III</p> <p>12 is a test to look for neoplastic transformation,</p> <p>13 correct?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: All of it, or just the</p> <p>16 part of the agar and growing up the --</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. Well, if you look at the aim, it says</p> <p>19 exposure to talc results in neoplastic transformation</p> <p>20 of normal ovarian surface epithelial cells. Do you see</p> <p>21 that in bold?</p> <p>22 A. I do.</p> <p>23 Q. That was the aim of this test, correct?</p> <p>24 A. Correct.</p> <p>25 Q. You were going to do this test and look to</p>	<p style="text-align: right;">Page 509</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. You purported to do this test --</p> <p>3 A. What's this test?</p> <p>4 Q. -- using the cells suspended in agar,</p> <p>5 correct --</p> <p>6 MS. O'DELL: Object to form.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. -- in this proposal?</p> <p>9 A. That's not a test. A test is something you</p> <p>10 test. This is growing cells.</p> <p>11 Q. You proposed to do tests from cells growing</p> <p>12 in agar?</p> <p>13 A. What tests?</p> <p>14 MS. O'DELL: Object.</p> <p>15 THE WITNESS: I'm asking you what</p> <p>16 tests you're asking me?</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. The tests you described in this --</p> <p>19 A. What tests? Tell me, what tests?</p> <p>20 Q. Doctor, can you read this piece of paper?</p> <p>21 A. I read it. I am the one who wrote it. I</p> <p>22 know exactly what I wrote.</p> <p>23 Q. And you wanted to do these tests --</p> <p>24 A. What these tests?</p> <p>25 Q. -- because, as you say at the end, we expect</p>
<p style="text-align: right;">Page 508</p> <p>1 see whether there was neoplastic transformation of</p> <p>2 normal ovarian surface epithelial cells, correct?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 There are multiple tests described in this paragraph.</p> <p>5 THE WITNESS: I don't -- we are</p> <p>6 talking about something I didn't do.</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Understood.</p> <p>9 A. I proposed to do, but I didn't do. It's</p> <p>10 just a proposal.</p> <p>11 Q. Right. You did not do any test to directly</p> <p>12 look at neoplastic transformation of normal epithelial</p> <p>13 cells, correct?</p> <p>14 A. Not correct.</p> <p>15 Q. How is that not correct?</p> <p>16 A. Because I did apoptosis and proliferation.</p> <p>17 Q. That's a -- those are different tests than</p> <p>18 you describe here?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. Correct?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: Okay. Let's make this</p> <p>24 easy. What test you are referring to? Name me -- name</p> <p>25 one test, please.</p>	<p style="text-align: right;">Page 510</p> <p>1 that exposure of normal ovarian surface epithelial</p> <p>2 cells to talc will result in neoplastic transformation</p> <p>3 of these cells over time, which is critical in</p> <p>4 establishing a cause-and-effect relationship. You</p> <p>5 wrote that, correct?</p> <p>6 MS. O'DELL: Object. Object to the</p> <p>7 form.</p> <p>8 THE WITNESS: What you read is from</p> <p>9 here. That is what I wrote.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. And you did not do the tests in Aim III?</p> <p>12 MS. O'DELL: Object to the form,</p> <p>13 misrepresents what he just said.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. Correct?</p> <p>16 A. I just said, if you want -- okay. If you</p> <p>17 want, we can --</p> <p>18 MS. O'DELL: No, just be clear.</p> <p>19 THE WITNESS: -- spend more time.</p> <p>20 I'm very clear. I'm very clear.</p> <p>21 MS. O'DELL: Be clear in your</p> <p>22 testimony. Excuse me, Doctor. He's asked you a very</p> <p>23 confusing question. I've objected to the form. Be</p> <p>24 clear on what --</p> <p>25 THE WITNESS: Okay.</p>

<p style="text-align: right;">Page 511</p> <p>1 MS. O'DELL: -- your tests are that</p> <p>2 you performed.</p> <p>3 MR. HEGARTY: Well, it's not very</p> <p>4 confusing. It's only very confusing to the doctor</p> <p>5 because he obviously doesn't want to answer.</p> <p>6 THE WITNESS: No, no, not at all.</p> <p>7 Not at all.</p> <p>8 MS. O'DELL: That's -- that's really</p> <p>9 improper, and --</p> <p>10 THE WITNESS: I -- I would really</p> <p>11 answer any question you want me to answer.</p> <p>12 MS. O'DELL: Fine.</p> <p>13 THE WITNESS: Ask me, please, any</p> <p>14 questions you want. What I'm trying to say, I don't</p> <p>15 want to answer something I don't understand. I'm</p> <p>16 trying to ask you simple question, can you clarify your</p> <p>17 question, say what tests you are referring to. So that</p> <p>18 is very simple question. You're asking me what</p> <p>19 tests --</p> <p>20 BY MR. HEGARTY:</p> <p>21 Q. I agree.</p> <p>22 A. -- I wanted to do. I'm asking you what you</p> <p>23 are the tests you are looking -- you are talking about.</p> <p>24 Q. I agree, my questions have been very simple.</p> <p>25 Doctor, did you did not perform the tests described in</p>	<p style="text-align: right;">Page 513</p> <p>1 A. What page is that?</p> <p>2 Q. Same Aim III we've been long at.</p> <p>3 A. 27? Are you talking about 27?</p> <p>4 Q. Yes.</p> <p>5 A. Reference 27. Okay.</p> <p>6 Q. Did you perform a neoplastic transformation</p> <p>7 assay for purpose of your manuscript?</p> <p>8 A. Where is 27. One more time, please.</p> <p>9 Q. You described in this aim utilizing a</p> <p>10 neoplastic transformation assay, correct?</p> <p>11 A. Yes.</p> <p>12 Q. Did you perform that assay for purposes of</p> <p>13 your manuscript?</p> <p>14 A. No.</p> <p>15 Q. Turn over to the last page -- or second to</p> <p>16 last page, which is Phase II. Do you see that?</p> <p>17 A. Phase II. General Methods.</p> <p>18 Q. Phase II. Phase II will be the</p> <p>19 S-nitrosylation of caspase-3 assay/apoptosis. Do you</p> <p>20 see that?</p> <p>21 A. I do.</p> <p>22 Q. Did you do that test?</p> <p>23 A. I did the S -- the caspase-3</p> <p>24 assay/apoptosis, yes.</p> <p>25 Q. Did you do the -- did you do the</p>
<p style="text-align: right;">Page 512</p> <p>1 Aim III, correct? That was the question.</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: I did not perform all</p> <p>4 the tests here. I performed part of it, which is</p> <p>5 apoptosis part.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. Using the test method you describe in</p> <p>8 Aim III?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: What test method? You</p> <p>11 see, that's where my concern is, what test method</p> <p>12 you're talking about.</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. The test method involving suspending cells</p> <p>15 in agar.</p> <p>16 A. That's not a test method.</p> <p>17 Q. What is it?</p> <p>18 A. That's a culture. We treat -- that's not a</p> <p>19 treatment. This is where you put cells this culture.</p> <p>20 Q. Did you do that for purposes of your</p> <p>21 manuscript?</p> <p>22 A. No.</p> <p>23 Q. There's a reference at the -- in the third</p> <p>24 line down to utilizing a neoplastic transformation</p> <p>25 assay.</p>	<p style="text-align: right;">Page 514</p> <p>1 S-nitrosylation?</p> <p>2 MS. O'DELL: Objection.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Did you do the S-nitrosylation of caspase-3?</p> <p>5 A. No. We did the caspase-3 activity.</p> <p>6 Q. Why did you not do the S-nitrosylation of</p> <p>7 caspase-3?</p> <p>8 A. You want to do the S-nitrosylation of</p> <p>9 caspase-3 if you want to know the mechanism by</p> <p>10 which caspase-3 is nitrosylated, and since we are not</p> <p>11 doing the transformation, we're just doing it with</p> <p>12 immortalized cell lines to figure out if talc has an</p> <p>13 effect or not, then we just did the activity of</p> <p>14 caspase-3. S-nitrosylation of caspase-3 affect</p> <p>15 caspase-3 activity, so it's an incorrect method.</p> <p>16 MR. HEGARTY: Let's take a quick</p> <p>17 break.</p> <p>18 THE VIDEOGRAPHER: We're going off</p> <p>19 the record, the time is 12:08.</p> <p>20 (There was a recess taken.)</p> <p>21 THE VIDEOGRAPHER: We're back on the</p> <p>22 record at 12:26.</p> <p>23 DEPOSITION EXHIBIT 45</p> <p>24 Form B</p> <p>25 WAS MARKED BY THE REPORTER</p>

<p style="text-align: right;">Page 515</p> <p>1 FOR IDENTIFICATION</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. I've marked next as Exhibit 45 a copy of</p> <p>4 a document we were provided by Plaintiffs' counsel</p> <p>5 last week that has Form B at the top. Doctor, what is</p> <p>6 Form B?</p> <p>7 A. This is the disclosure of consulting for</p> <p>8 Wayne State University for faculty.</p> <p>9 Q. This is a form you prepared?</p> <p>10 A. This is the form they give us to fill out.</p> <p>11 Q. You filled out Exhibit 45?</p> <p>12 A. I did.</p> <p>13 Q. You reported in Exhibit 45 for 2018 your</p> <p>14 consultation work at four hours every Friday; is that</p> <p>15 correct?</p> <p>16 A. Correct.</p> <p>17 Q. Does that accurately describe the amount of</p> <p>18 time and when you spent that time consulting in 2018?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: No. So this is only</p> <p>21 included the consultation we have half a day a week,</p> <p>22 from 9:00 to 5:00 during business hours, 9:00 to</p> <p>23 5:00 --</p> <p>24 MS. O'DELL: Excuse me.</p> <p>25 THE WITNESS: -- Monday through</p>	<p style="text-align: right;">Page 517</p> <p>1 THE WITNESS: I don't understand the</p> <p>2 question.</p> <p>3 BY MR. HEGARTY:</p> <p>4 Q. Well, shouldn't you describe under Agency</p> <p>5 the entity for whom you're consulting?</p> <p>6 A. Not necessarily.</p> <p>7 Q. Well, you're not -- you're -- in this -- for</p> <p>8 this litigation, you're consulting with Beasley Allen,</p> <p>9 correct?</p> <p>10 A. Correct.</p> <p>11 Q. Why didn't you identify Beasley Allen under</p> <p>12 Agency?</p> <p>13 A. Unnecessary to do because the consultation</p> <p>14 with Beasley Allen were done -- was done under the</p> <p>15 DS Biotech.</p> <p>16 Q. Some of the consulting that you did for</p> <p>17 Beasley Allen was during the week, though, correct,</p> <p>18 during that half day a week?</p> <p>19 A. Friday, yes. I'm allowed to do half a day a</p> <p>20 week.</p> <p>21 Q. Your interpretation of the word agency would</p> <p>22 be to identify your company that you consult with as</p> <p>23 opposed to who you're consulting with?</p> <p>24 A. That's what I was advised to do by Faculty</p> <p>25 Affair.</p>
<p style="text-align: right;">Page 516</p> <p>1 Friday. After hours, after 5:00, weekends are not</p> <p>2 included here. This is just the official time of the</p> <p>3 university.</p> <p>4 BY MR. HEGARTY:</p> <p>5 Q. So what you list here is every Friday</p> <p>6 between 9:00 and 5:00 you've averaged four hours of</p> <p>7 consultation?</p> <p>8 A. I have --</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: I have half a day</p> <p>11 deducted from my 9:00 to 5:00 obligation to the</p> <p>12 university. And then --</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. And as -- I'm sorry.</p> <p>15 A. -- I can work extra.</p> <p>16 Q. You don't have to report that working extra?</p> <p>17 A. To the university?</p> <p>18 Q. To the university?</p> <p>19 A. No.</p> <p>20 Q. When you say description of consulting</p> <p>21 owner, what does that mean?</p> <p>22 A. The owner of the DS Biotech.</p> <p>23 Q. Does the agency, though, refer to who you're</p> <p>24 consulting for?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 518</p> <p>1 Q. Who advised you to do that?</p> <p>2 A. Faculty Affair.</p> <p>3 Q. Who is that?</p> <p>4 A. You have the e-mail right there.</p> <p>5 Q. Okay. We'll jump to that e-mail.</p> <p>6 DEPOSITION EXHIBIT 46</p> <p>7 E-Mail with Advice Regarding Form B</p> <p>8 WAS MARKED BY THE REPORTER</p> <p>9 FOR IDENTIFICATION</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. I've marked as Exhibit 46 the e-mail the</p> <p>12 doctor pointed in follow-up to -- or in connection with</p> <p>13 an answer he gave to a question as far as how he was</p> <p>14 advised to fill out Form B. Can you tell me about that</p> <p>15 advice as -- as it pertains to Exhibit 46?</p> <p>16 A. Yes. That's what I consulted with them,</p> <p>17 that I -- I did not need to itemize what companies</p> <p>18 under the DS Biotech I consulted with. They don't</p> <p>19 care. They just want DS Biotech.</p> <p>20 Q. The person you spoke with was the person who</p> <p>21 sent you this e-mail, Kate Laimbeer?</p> <p>22 A. Correct.</p> <p>23 Q. This notes that you had this phone call --</p> <p>24 or strike that. This e-mail, as reflected in</p> <p>25 Exhibit 46, is dated February 8, 2019; is that correct?</p>

<p style="text-align: right;">Page 519</p> <p>1 A. It says so, yes.</p> <p>2 Q. Did you have such a discussion with anyone</p> <p>3 before the February 2019 time period about how to fill</p> <p>4 out this form?</p> <p>5 A. No. It's after my previous deposition that</p> <p>6 we were talking about conflict of interest, I wanted to</p> <p>7 make sure that I'm doing the right thing. I called</p> <p>8 them again, and I discussed with them, and they said I</p> <p>9 was -- what I was doing is perfectly all right.</p> <p>10 DEPOSITION EXHIBIT 47</p> <p>11 Form B for Calendar Year 2017</p> <p>12 WAS MARKED BY THE REPORTER</p> <p>13 FOR IDENTIFICATION</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. I've next marked as Exhibit 47 --</p> <p>16 MS. O'DELL: Thank you.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. -- the Form B for calendar year 2017; is</p> <p>19 that correct?</p> <p>20 A. Correct.</p> <p>21 Q. This again was a form that you filled out,</p> <p>22 right?</p> <p>23 A. Correct.</p> <p>24 Q. On this form, you describe under the heading</p> <p>25 Date, two hours Saturday, and under hours you list</p>	<p style="text-align: right;">Page 521</p> <p>1 Exhibit 47, you listed --</p> <p>2 MS. O'DELL: I'm sorry, Mark. When</p> <p>3 you say a hundred hours of work, which two invoices did</p> <p>4 you -- or which invoices --</p> <p>5 MR. HEGARTY: I'm adding up</p> <p>6 invoice -- the first one, the second one, and the third</p> <p>7 one in --</p> <p>8 MS. O'DELL: What are the dates on</p> <p>9 them, or the invoice numbers?</p> <p>10 THE WITNESS: The third one is</p> <p>11 January.</p> <p>12 MR. HEGARTY: They are --</p> <p>13 THE WITNESS: 22 and 17.</p> <p>14 MR. HEGARTY: I don't see invoice</p> <p>15 numbers on them.</p> <p>16 THE WITNESS: 64.</p> <p>17 MS. O'DELL: I think they're in the</p> <p>18 right corner invoice number, and it's -- you said a</p> <p>19 hundred hours.</p> <p>20 MR. HEGARTY: Invoice number, right.</p> <p>21 MS. O'DELL: You said a hundred</p> <p>22 hours, and they're not a hundred hours that were billed</p> <p>23 for in 2017.</p> <p>24 THE WITNESS: 64 hours was billed on</p> <p>25 2017.</p>
<p style="text-align: right;">Page 520</p> <p>1 10:00 a.m. to 12 noon. Do you see that?</p> <p>2 A. I do.</p> <p>3 Q. We just talked about a form, the Form B</p> <p>4 before where you said that you needed to only list</p> <p>5 consulting activity that you were doing during the</p> <p>6 week. Did that -- did the process or procedure</p> <p>7 change?</p> <p>8 A. No. This is 2017, and it's supposed to be a</p> <p>9 Friday.</p> <p>10 Q. The date is supposed to be a Friday?</p> <p>11 A. Friday. That's my consultation time.</p> <p>12 Q. I'm going to show you from your last</p> <p>13 deposition Exhibit Number 4, which were your invoices</p> <p>14 that were provided at your deposition, and this exhibit</p> <p>15 shows that you started consulting with Beasley Allen</p> <p>16 for which you were invoicing them beginning in the</p> <p>17 October/September time frame through the end of the</p> <p>18 year. Do you see that?</p> <p>19 A. I do.</p> <p>20 Q. If you look at those invoices for the 2017</p> <p>21 time frame and -- and you do the math, at least the</p> <p>22 math I did, it comes out to be about a hundred hours of</p> <p>23 work.</p> <p>24 A. Okay.</p> <p>25 Q. But on your form that we marked as</p>	<p style="text-align: right;">Page 522</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. You have for an invoice dated 1-25-2018,</p> <p>3 58 hours?</p> <p>4 A. What date is that?</p> <p>5 Q. That is invoice 10 -- 10025.</p> <p>6 A. That's January.</p> <p>7 Q. January. So did you bill --</p> <p>8 A. That's the following year.</p> <p>9 Q. So your invoice in January of 2018 was</p> <p>10 60 hours for that month?</p> <p>11 A. That's 25 days in January, yes.</p> <p>12 Q. That was -- that would be more than four</p> <p>13 hours a week, right?</p> <p>14 A. Again -- okay. The consultation time is</p> <p>15 four hours from 9:00 to 5:00 my work, but I can work</p> <p>16 from 5:00 to 9:00 every day, I can work with weekends.</p> <p>17 I can work, work, work.</p> <p>18 DEPOSITION EXHIBIT 48</p> <p>19 E-Mail Dated February 7, 2019</p> <p>20 WAS MARKED BY THE REPORTER</p> <p>21 FOR IDENTIFICATION</p> <p>22 BY MR. HEGARTY:</p> <p>23 Q. I've marked next as Exhibit 48 an e-mail</p> <p>24 dated February 7, 2019 regarding publishing of your</p> <p>25 manuscript; is that correct?</p>

<p style="text-align: right;">Page 523</p> <p>1 A. The SRI?</p> <p>2 Q. From SRI; is that right?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: This is from SAGE, the</p> <p>5 proof -- the proofreading.</p> <p>6 BY MR. HEGARTY:</p> <p>7 Q. This is in connection with your manuscript</p> <p>8 being published, correct?</p> <p>9 A. Yes, the SRI manuscript.</p> <p>10 Q. Have you had any further communications with</p> <p>11 Reproductive Sciences or SAGE about your manuscript</p> <p>12 since February 7, 2019?</p> <p>13 A. No.</p> <p>14 DEPOSITION EXHIBIT 49</p> <p>15 E-Mail Forwarded by Amy Harper on</p> <p>16 February 11, 2019</p> <p>17 WAS MARKED BY THE REPORTER</p> <p>18 FOR IDENTIFICATION</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. I've next marked as Exhibit 49 an e-mail</p> <p>21 that was forwarded to you by Amy Harper on February 11,</p> <p>22 2019.</p> <p>23 A. Correct.</p> <p>24 Q. She's forwarding you that e-mail, an e-mail</p> <p>25 from Reproductive Sciences dated October 10, 2018; is</p>	<p style="text-align: right;">Page 525</p> <p>1 A. The Genome-Wide Association Study.</p> <p>2 Q. Have you ever gone to the website and used</p> <p>3 the search tool for the catalog?</p> <p>4 A. I did.</p> <p>5 Q. Have you done it in the last four or five</p> <p>6 weeks?</p> <p>7 A. I did it yesterday.</p> <p>8 Q. Why did you do it yesterday?</p> <p>9 A. Because I wanted to look for new information</p> <p>10 about the risk of ovarian cancer with our markers, if</p> <p>11 there is any updates.</p> <p>12 Q. So what searches did you do on the GWAS</p> <p>13 catalog?</p> <p>14 A. If you go to NCBI website -- what search,</p> <p>15 ovarian -- ovarian oxidative stress and increased</p> <p>16 ovarian cancer risk.</p> <p>17 Q. And I asked you what search because it</p> <p>18 actually gives you a box you can type search terms</p> <p>19 into, correct?</p> <p>20 A. They do, yes.</p> <p>21 Q. And what you just listed were the search</p> <p>22 terms you typed in?</p> <p>23 A. Oxidative stress, risk of ovarian cancer.</p> <p>24 Q. Did you print off the results?</p> <p>25 A. No.</p>
<p style="text-align: right;">Page 524</p> <p>1 that correct?</p> <p>2 A. Correct.</p> <p>3 Q. How did the -- how did the forwarding of</p> <p>4 this e-mail come about?</p> <p>5 A. I asked her to forward me the -- this</p> <p>6 letter?</p> <p>7 Q. Why did you ask her to forward you this</p> <p>8 letter?</p> <p>9 A. She has access to the submission online, and</p> <p>10 we needed this letter because you guys asked us for all</p> <p>11 the communications, so I asked her to provide it.</p> <p>12 Q. Did you ask her to provide all</p> <p>13 communications that she has in her possession with</p> <p>14 RSI (sic) regarding your manuscript?</p> <p>15 A. Correct.</p> <p>16 Q. Did she provide any communications to you</p> <p>17 besides this one?</p> <p>18 A. (Gesturing).</p> <p>19 Q. That's the same one.</p> <p>20 A. Oh. She may. Everything she gave me, I</p> <p>21 gave you. It's pretty simple.</p> <p>22 Q. Dr. Saed, do you know what the GWAS catalog</p> <p>23 is?</p> <p>24 A. Yes, I do.</p> <p>25 Q. What is it?</p>	<p style="text-align: right;">Page 526</p> <p>1 Q. Did you also do a search for any of the SNPs</p> <p>2 that you reported on in your manuscript?</p> <p>3 A. In the GWAS?</p> <p>4 Q. Correct, in the GWAS catalog.</p> <p>5 MS. O'DELL: Doctor, before you</p> <p>6 answer the question, I would just object to the</p> <p>7 question to the extent that Ms. Sharko conveyed in a</p> <p>8 February 6th e-mail, we aren't going to plow old</p> <p>9 ground, and -- and that was conveyed to Judge Pisano.</p> <p>10 So you covered this -- this -- this area in detail last</p> <p>11 time.</p> <p>12 MR. HEGARTY: I'm not -- one, I'm</p> <p>13 not replowing old ground, and two, she represented that</p> <p>14 because documents were produced late, that it precluded</p> <p>15 us from covering areas that we would have otherwise</p> <p>16 been able to cover if we had had more time, and this is</p> <p>17 one such area that we were not able to cover because we</p> <p>18 had to spend our time going through documents that</p> <p>19 should have been produced.</p> <p>20 MS. O'DELL: That's what -- what was</p> <p>21 represented to Judge Pisano by Ms. Sharko in a</p> <p>22 February 6th e-mail was not what you just said. She</p> <p>23 said, we aren't going to replot old ground, end quote.</p> <p>24 MR. HEGARTY: And I'm not replowing</p> <p>25 old ground.</p>

<p style="text-align: right;">Page 527</p> <p>1 MS. O'DELL: I think you are. I'm</p> <p>2 just putting you on notice that that was the</p> <p>3 representation.</p> <p>4 MR. HEGARTY: I don't disagree</p> <p>5 that's the representation, but I do disagree with your</p> <p>6 contention that I'm replotting old ground.</p> <p>7 MS. O'DELL: I think you are, but --</p> <p>8 MR. HEGARTY: You can do what you</p> <p>9 want to do then.</p> <p>10 BY MR. HEGARTY:</p> <p>11 Q. Doctor, my question was, did you put into</p> <p>12 the GWAS catalog search any of the SNPs you looked at,</p> <p>13 catalase, MPO, GSR? Did you do those searches?</p> <p>14 A. Not recently.</p> <p>15 MS. O'DELL: Object to form.</p> <p>16 BY MR. HEGARTY:</p> <p>17 Q. You didn't do that yesterday?</p> <p>18 A. No.</p> <p>19 Q. Did you do any other searches yesterday</p> <p>20 using the GWAS catalog besides those you talked about?</p> <p>21 A. No.</p> <p>22 Q. Did you do any other searches -- strike</p> <p>23 that. Did you do that search in preparation for</p> <p>24 today's deposition?</p> <p>25 A. No.</p>	<p style="text-align: right;">Page 529</p> <p>1 A. Maybe.</p> <p>2 Q. Well, do you read it any differently than I</p> <p>3 did, I just described?</p> <p>4 A. No. What I'm saying is it doesn't have to</p> <p>5 be reported here. So the SNP is already known, and</p> <p>6 it's been reported, published. It's not in the GWAS.</p> <p>7 Q. This catalog, though, lists -- lists those</p> <p>8 SNPs that have achieved genome-wide significance for</p> <p>9 whatever particular risk they're -- you're looking at,</p> <p>10 correct?</p> <p>11 A. What risk you're looking at here.</p> <p>12 MS. O'DELL: Object -- excuse me.</p> <p>13 Object to the form.</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. This printout is just of a search of MPO and</p> <p>16 what significance it is achieved in terms of the</p> <p>17 studies, correct?</p> <p>18 A. No.</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: Not correct.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. What did I say that was not correct?</p> <p>23 A. So what you need to do, the GWAS -- do you</p> <p>24 want me to explain how it works?</p> <p>25 Q. Sure.</p>
<p style="text-align: right;">Page 528</p> <p>1 Q. Okay. Why did you --</p> <p>2 A. Most of the times I do this. Frequently.</p> <p>3 Q. So that's a catalog you frequently search?</p> <p>4 A. Yes, I do.</p> <p>5 Q. Is it an authoritative source for -- for</p> <p>6 you?</p> <p>7 A. Not necessarily, no.</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 DEPOSITION EXHIBIT 50</p> <p>10 GWAS Catalog Search</p> <p>11 WAS MARKED BY THE REPORTER</p> <p>12 FOR IDENTIFICATION</p> <p>13 BY MR. HEGARTY:</p> <p>14 Q. I'm going to show you what I've marked as</p> <p>15 Exhibit Number 50. This is a GWAS catalog search for</p> <p>16 MPO. MPO is one of the SNPs you looked at, correct,</p> <p>17 Doctor?</p> <p>18 A. Correct.</p> <p>19 Q. If you looks at results from that search,</p> <p>20 none of those results report any association with that</p> <p>21 MPO with ovarian cancer risk, correct?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: Here?</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. Correct.</p>	<p style="text-align: right;">Page 530</p> <p>1 A. 'Cause that's not how you do it.</p> <p>2 Q. All right. Explain it to me.</p> <p>3 A. Okay. GWAS, they compare -- they take DNA</p> <p>4 from normal patients, DNA from -- let's say I want to</p> <p>5 look at risk of ovarian cancer, from ovarian cancer</p> <p>6 patients, okay, and then they sequence the genome from</p> <p>7 group, the normal group and the patient group, and then</p> <p>8 they see which variance in these SNP in this genome</p> <p>9 that can be associated with this disease.</p> <p>10 So when you do the search, you have</p> <p>11 to put both parameters, not just one. If you put just</p> <p>12 MPO, it's going to tell you everything that related to</p> <p>13 what, in relation to what disease. You need to put</p> <p>14 something next to it.</p> <p>15 Q. So according to you, to determine whether</p> <p>16 MPO has reached genome-wide significance using the GWAS</p> <p>17 catalog, you have to put in MPO and ovarian cancer?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: I didn't say that. I</p> <p>20 said the MPO that we use, the SNP that we use, okay, it</p> <p>21 is listed in GWAS, and the -- the -- it is minus four,</p> <p>22 if I can recall correctly, 63 --</p> <p>23 MS. O'DELL: Feel free to look at</p> <p>24 your manuscript if you need to.</p> <p>25 THE WITNESS: Something like that,</p>

<p style="text-align: right;">Page 531</p> <p>1 and this has been --</p> <p>2 MS. O'DELL: Don't -- don't -- be</p> <p>3 precise.</p> <p>4 THE WITNESS: Minus -- where do I</p> <p>5 find it now, in my manuscript. Do you want to know</p> <p>6 which one exactly? Okay, where is the table?</p> <p>7 BY MR. HEGARTY:</p> <p>8 Q. Finish your answer.</p> <p>9 A. Yeah, I'm trying to determine the exact.</p> <p>10 MS. O'DELL: If you need the table</p> <p>11 to finish your answer, Doctor --</p> <p>12 THE WITNESS: Yeah, the exact --</p> <p>13 yeah. Okay. So here we go. So --</p> <p>14 BY MR. HEGARTY:</p> <p>15 Q. What are you look at? What exhibit?</p> <p>16 A. I'm look at Exhibit 42. Where -- where is</p> <p>17 that. Where is my manuscript. I need my manuscript.</p> <p>18 Hold on one second.</p> <p>19 I'm just trying to remember what</p> <p>20 SNP number is going here, and it's not listed in -- in</p> <p>21 the genome wide. But it has been published about,</p> <p>22 that's what I'm trying to tell you. But it's not -- I</p> <p>23 don't find it here. It's minus 463, I believe. But I</p> <p>24 can't find it.</p> <p>25 But what I'm trying to say is that</p>	<p style="text-align: right;">Page 533</p> <p>1 maybe once or twice, I don't know. I can't remember.</p> <p>2 Q. Have you had conversations with him beyond</p> <p>3 more than those -- more than those once or twice</p> <p>4 meetings?</p> <p>5 A. The last time I met him was two years ago,</p> <p>6 over two years ago.</p> <p>7 Q. Have you ever had any manuscripts rejected</p> <p>8 by Reproductive Sciences?</p> <p>9 A. Yes.</p> <p>10 Q. In the last -- when was the last time you</p> <p>11 had a manuscript rejected?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: When was the last time</p> <p>14 I had -- I can't remember. I really can't.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Since your deposition last month, have you</p> <p>17 given any presentations to anyone at your university or</p> <p>18 anyone in your profession regarding the results of your</p> <p>19 tests?</p> <p>20 A. Individuals?</p> <p>21 Q. Individuals or groups.</p> <p>22 A. Agencies?</p> <p>23 Q. Or agencies, anybody, since your last</p> <p>24 deposition?</p> <p>25 A. Yeah, Health Canada. I sent them an e-mail.</p>
<p style="text-align: right;">Page 532</p> <p>1 there are SNPs that are reported in the GWAS for</p> <p>2 myeloperoxidase, like for example, this SNP that we --</p> <p>3 minus 463 that has been published upon that has been</p> <p>4 associated with ovarian cancer. That's what I'm trying</p> <p>5 to say.</p> <p>6 Q. Has that SNP achieved genome-wide</p> <p>7 significance?</p> <p>8 A. I don't know.</p> <p>9 Q. If you would find Exhibit 40, please.</p> <p>10 A. 40?</p> <p>11 Q. Four-oh.</p> <p>12 A. 40. That's 50. Where is 40. 44, 43. Yes.</p> <p>13 Q. Exhibit 40 is a correspondence from you to</p> <p>14 Dr. Layman, correct?</p> <p>15 A. Correct.</p> <p>16 Q. Who is Dr. Layman?</p> <p>17 A. He is the Chief Editor for Reproductive</p> <p>18 Science.</p> <p>19 Q. Do you personally know Dr. Layman?</p> <p>20 A. Do I personally know him, no.</p> <p>21 Q. Have you ever met him?</p> <p>22 A. I met him once. He comes to the society</p> <p>23 meeting.</p> <p>24 Q. You only met him once then, though?</p> <p>25 A. No. I met him during the society meetings,</p>	<p style="text-align: right;">Page 534</p> <p>1 Q. What are you --</p> <p>2 A. Telling them about my results. I have a</p> <p>3 paper in press that deals with the effect of talcum</p> <p>4 powder on the induction of oxidative stress.</p> <p>5 Q. When did you send an e-mail to Health</p> <p>6 Canada?</p> <p>7 A. Ten days ago maybe, a week. I can't</p> <p>8 remember exactly.</p> <p>9 Q. Who did you send it to?</p> <p>10 A. I went to the website, there was an e-mail</p> <p>11 that they ask you if you want to report something,</p> <p>12 clicked on the e-mail, and sent it.</p> <p>13 Q. What did you send?</p> <p>14 A. I just told you, I sent that I have paper,</p> <p>15 manuscript in press that shows the effect of talcum</p> <p>16 powder on oxidative stress markers.</p> <p>17 Q. Do you still have a copy of what you sent to</p> <p>18 Health Canada?</p> <p>19 A. E-mail, you mean?</p> <p>20 Q. Yes.</p> <p>21 A. I'm sure I can find my e-mail.</p> <p>22 Q. Did you get a response?</p> <p>23 A. I got a response saying that I will be</p> <p>24 contacted later.</p> <p>25 Q. Have you been contacted since you got that</p>

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<p>1 e-mail response?</p> <p>2 A. Not yet.</p> <p>3 Q. Did you provide Health Canada with a copy of</p> <p>4 your manuscript?</p> <p>5 A. No.</p> <p>6 Q. What prompted you to contact that particular</p> <p>7 agency with regard to your manuscript?</p> <p>8 A. Because that particular agency announced</p> <p>9 talcum powder as a risk factor for ovarian cancer.</p> <p>10 Q. How did you become aware of that?</p> <p>11 A. The media. It's everywhere.</p> <p>12 Q. When did you become aware of what</p> <p>13 Health Canada had announced with regard to talc and</p> <p>14 ovarian cancer?</p> <p>15 A. I can't remember exactly.</p> <p>16 Q. Did you become aware of it before your</p> <p>17 deposition last month?</p> <p>18 A. Before.</p> <p>19 Q. And what prompted you ten days ago, at that</p> <p>20 point in time, to actually go on the website and then</p> <p>21 send an e-mail?</p> <p>22 A. The manuscript -- I was waiting for the</p> <p>23 manuscript to get in press.</p> <p>24 Q. And what -- what document told you that the</p> <p>25 manuscript was in press?</p>	<p>1 presentation to anyone else about your test results or</p> <p>2 your manuscript?</p> <p>3 A. No.</p> <p>4 Q. Have you sent -- strike that. Have you</p> <p>5 communicated with FDA with regard to the findings in</p> <p>6 your manuscript?</p> <p>7 A. No.</p> <p>8 Q. Have you communicated with anyone at the</p> <p>9 medical school for Wayne State regarding your</p> <p>10 manuscript or your test results?</p> <p>11 A. No.</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: But no.</p> <p>14 MS. O'DELL: Other than the author.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Have you ever prepared --</p> <p>17 A. Yes, thank you. Other than the authors.</p> <p>18 MR. HEGARTY: Do you want to take a</p> <p>19 microphone and answer for him?</p> <p>20 MS. O'DELL: No. I'll just object.</p> <p>21 MR. HEGARTY: Do you think that was</p> <p>22 proper to add the name to get the doctor --</p> <p>23 MS. O'DELL: I think the question</p> <p>24 was confusing, and -- and he testified to the other</p> <p>25 co-authors and their positions at the university, one</p>
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<p>1 A. This reproof that I got.</p> <p>2 Q. You're talking -- you're pointing to</p> <p>3 Exhibit 40?</p> <p>4 A. February -- no. February -- from SAGE. The</p> <p>5 reproof that I just got, February 7.</p> <p>6 Q. So your e-mail correspondence --</p> <p>7 A. 48.</p> <p>8 Q. I'm sorry, Exhibit 48?</p> <p>9 A. (Nodding head).</p> <p>10 Q. So your e-mail correspondence with Health</p> <p>11 Canada would have come after February 7th?</p> <p>12 MS. O'DELL: Object to form.</p> <p>13 THE WITNESS: I can't remember. I</p> <p>14 really can't remember.</p> <p>15 BY MR. HEGARTY:</p> <p>16 Q. Other than communicating with Health Canada</p> <p>17 regarding your manuscript or your test results, since</p> <p>18 your last deposition -- I think it was on the 23rd</p> <p>19 or --</p> <p>20 A. 22nd.</p> <p>21 Q. 22nd of January --</p> <p>22 MS. O'DELL: January 23rd.</p> <p>23 THE WITNESS: 23rd.</p> <p>24 BY MR. HEGARTY:</p> <p>25 Q. -- have you reached out, spoken with, gave a</p>	<p>1 of which is -- is a professor at the medical school.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Have you ever prepared a PowerPoint</p> <p>4 presentation where you lay out the results of your</p> <p>5 tests or talk about your manuscript?</p> <p>6 A. To whom?</p> <p>7 Q. To anybody.</p> <p>8 A. Posters is a PowerPoint presentation?</p> <p>9 Q. Well, besides the poster.</p> <p>10 A. Is that considered a --</p> <p>11 Q. Well, you know what a PowerPoint</p> <p>12 presentation is?</p> <p>13 A. That's a PowerPoint presentation.</p> <p>14 Q. Just your poster?</p> <p>15 A. Yeah.</p> <p>16 Q. Okay. Have you -- other than that poster,</p> <p>17 have you ever prepared a multi --</p> <p>18 A. Like an oral talk?</p> <p>19 Q. Like an oral talk?</p> <p>20 A. Yeah, no.</p> <p>21 Q. Do you have any current plans to give any</p> <p>22 kind of presentation beyond what we've talked about</p> <p>23 already in terms of the abstract presentation? Is</p> <p>24 there anything planned for you to speak about your</p> <p>25 results or your manuscript that we have not talked</p>

<p style="text-align: right;">Page 539</p> <p>1 about in this deposition?</p> <p>2 A. I'm going to SRI conference in Paris next</p> <p>3 month, and I'm going to present this work that you see,</p> <p>4 these abstracts, and Dr. Harper will go to SU and</p> <p>5 present that in March, all of March.</p> <p>6 Q. Is that SRI presentation different than the</p> <p>7 other Paris presentation that we talked about?</p> <p>8 A. SRI is in Paris, SU is in Honolulu, and</p> <p>9 they're back to back. That's why I can't be in both.</p> <p>10 Q. Any other planned presentations --</p> <p>11 A. Not yet.</p> <p>12 Q. -- regarding your tests or your manuscript</p> <p>13 that you have not talked about?</p> <p>14 A. Not yet.</p> <p>15 Q. Is there anything in the works you have not</p> <p>16 talked about?</p> <p>17 A. The works, no.</p> <p>18 Q. Dr. Saed, you agree that not all</p> <p>19 inflammation is the same, correct?</p> <p>20 A. I don't understand the question.</p> <p>21 Q. Well, is all inflammation, regardless of the</p> <p>22 type, identical?</p> <p>23 A. It says information --</p> <p>24 MS. O'DELL: Object to form.</p> <p>25 THE WITNESS: -- in front of me</p>	<p style="text-align: right;">Page 541</p> <p>1 linked to cancer, cause of cancer.</p> <p>2 There is also an inflammation --</p> <p>3 inflammatory response, which is a normal response of</p> <p>4 the body, okay, like for example, during ovulation</p> <p>5 there is an oxidative stress and inflammation</p> <p>6 associated with, but that's a normal physiological</p> <p>7 process that is required for ovulation that will</p> <p>8 completely correct it when that process is done.</p> <p>9 Q. I'm going to jump around a little bit, and</p> <p>10 I'm going to come back to that. But in your</p> <p>11 manuscript, you report in the Treatment of Cells</p> <p>12 section on page five --</p> <p>13 A. Which exhibit do you have so we can --</p> <p>14 Q. Well, in here, it's Exhibit 7 was the</p> <p>15 original manuscript.</p> <p>16 A. Yes, this one?</p> <p>17 Q. Yes.</p> <p>18 A. Okay. What page?</p> <p>19 Q. If you go to page five.</p> <p>20 A. Okay.</p> <p>21 Q. You list under -- in the section Treatment</p> <p>22 of Cells as treated with Fisher Scientific or baby</p> <p>23 powder. Do you see where I'm reading?</p> <p>24 A. Yes, I do.</p> <p>25 Q. What of your data reported in your</p>
<p style="text-align: right;">Page 540</p> <p>1 here.</p> <p>2 BY MR. HEGARTY:</p> <p>3 Q. Inflammation.</p> <p>4 A. Oh, it says inflammation. It says</p> <p>5 information.</p> <p>6 Q. Is all inflammation the same?</p> <p>7 A. In what term you are trying to get me to</p> <p>8 answer?</p> <p>9 Q. Well, are there various types of</p> <p>10 inflammation?</p> <p>11 A. Yes, of course.</p> <p>12 Q. Do you agree that inflammation doesn't</p> <p>13 mean -- strike that. Do you mean that -- do you agree</p> <p>14 that inflammation of tissue doesn't mean that that</p> <p>15 tissue will become cancerous?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: Okay. Can I explain</p> <p>18 this?</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Yes.</p> <p>21 A. Okay. So there are two types of</p> <p>22 inflammation, okay. Acute inflammation that spike and</p> <p>23 come back, and that is not commonly linked with cancer</p> <p>24 development. And chronic inflammation that stays for a</p> <p>25 long time, and it is lower in magnitude, and that is</p>	<p style="text-align: right;">Page 542</p> <p>1 manuscript is of Fisher talc?</p> <p>2 A. None.</p> <p>3 Q. Why did you then list in the Treatment of</p> <p>4 Cells that the treatment was Fisher talc or baby</p> <p>5 powder?</p> <p>6 A. That's a typo, because we've done both, so</p> <p>7 it's a typo. When we get the proof, we will correct</p> <p>8 that. And I'm aware of that. We discussed that last</p> <p>9 time.</p> <p>10 Q. And how do the results of your tests show</p> <p>11 that talc can cause chronic inflammation to ovarian</p> <p>12 cells?</p> <p>13 A. The fact that it induces inflammation.</p> <p>14 That's -- that's -- that's -- that's a great indication</p> <p>15 that it is doing something in the body.</p> <p>16 Q. How long must inflammation last to be</p> <p>17 considered chronic?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: Okay, yes. So this is</p> <p>20 invitro studies in cell lines, so to simulate that with</p> <p>21 what's going invivo, you have to do animal studies.</p> <p>22 Which by the way, you asked me, but I misunderstood the</p> <p>23 question about if I have -- have I done invivo studies</p> <p>24 in animals, and I have done many, but not related to</p> <p>25 talc. I just want to correct this on the record.</p>

<p style="text-align: right;">Page 543</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. You have done many invivo studies --</p> <p>3 A. Yes.</p> <p>4 Q. -- in animals?</p> <p>5 A. Yes, because I was not understanding your</p> <p>6 invitro cells going to the animals. I have done real</p> <p>7 invivo studies where I operated on animals and create</p> <p>8 postoperative adhesions and studied many, many animal</p> <p>9 models, and I have published all that.</p> <p>10 MR. HEGARTY: Could we go off the</p> <p>11 record real quick?</p> <p>12 THE VIDEOGRAPHER: We're going to go</p> <p>13 off the record, the time is 12:56.</p> <p>14 (There was a recess taken.)</p> <p>15 THE VIDEOGRAPHER: We're back on the</p> <p>16 record at 1:22.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. Dr. Saed, you previously worked with your</p> <p>19 consulting firm, UD Biotech, with Michael Diamond; is</p> <p>20 that correct?</p> <p>21 A. No, that's not correct.</p> <p>22 Q. Who is Michael Diamond?</p> <p>23 A. Michael Diamond was our reproductive</p> <p>24 endocrinology chief at Wayne State, and when he was</p> <p>25 here, we created the company together, but we never did</p>	<p style="text-align: right;">Page 545</p> <p>1 Q. These opinions are made to a reasonable</p> <p>2 degree of scientific certainty, and my question is,</p> <p>3 what does that part of the sentence mean to you? What</p> <p>4 does it mean when you say your opinions are to a</p> <p>5 reasonable degree of scientific certainty?</p> <p>6 A. They are based on my expertise, training,</p> <p>7 experience, knowledge of the literature, all that</p> <p>8 stuff.</p> <p>9 Q. Well, I understand that that's what</p> <p>10 follows, but I mean when you say -- what is the</p> <p>11 meaning of a reasonable degree of scientific</p> <p>12 certainty?</p> <p>13 A. That's what I explained. That's what I</p> <p>14 meant. That's how I explained it.</p> <p>15 Q. You meant that your opinions are based on my</p> <p>16 experience, training and expertise, etcetera?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: My -- my opinion is</p> <p>19 based on my expertise, training, experience, and</p> <p>20 knowledge of literature.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. And that's what a reasonable degree of</p> <p>23 scientific certainty means to you?</p> <p>24 A. Yes.</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 544</p> <p>1 anything. So years later he moved to University of</p> <p>2 Augusta, and when he moved there, he asked to separate</p> <p>3 from the company. We never did anything together at</p> <p>4 the company.</p> <p>5 Q. Have you had any discussions with</p> <p>6 Dr. Diamond about your tests with talc or your</p> <p>7 manuscript?</p> <p>8 A. No.</p> <p>9 Q. You mentioned your report for this case,</p> <p>10 which is Exhibit 16. I'm not sure if I've given it</p> <p>11 back to you, and I think we have a --</p> <p>12 A. Thank you.</p> <p>13 Q. -- different number of exhibits here. You</p> <p>14 found your report?</p> <p>15 A. That's the report I think.</p> <p>16 Q. If you can go to page 20, please.</p> <p>17 A. Page 20. Sorry, I'm losing my voice. 20,</p> <p>18 yes.</p> <p>19 Q. In the section Summary of Opinions, do you</p> <p>20 see that section?</p> <p>21 A. I do.</p> <p>22 Q. You say, these opinions are made to a</p> <p>23 reasonable degree of scientific certainty. What does</p> <p>24 that mean to you?</p> <p>25 A. Where do you read, please?</p>	<p style="text-align: right;">Page 546</p> <p>1 BY MR. HEGARTY:</p> <p>2 Q. If you look at the end of that first</p> <p>3 paragraph, you say, knowledge of the relevant</p> <p>4 literature and my previous and ongoing research. Do</p> <p>5 you see that?</p> <p>6 A. I do.</p> <p>7 Q. Do you have any ongoing research with regard</p> <p>8 to this subject area?</p> <p>9 A. The talc and the inflammation?</p> <p>10 Q. Correct.</p> <p>11 A. Or the inflammation and cancer, yes, I do.</p> <p>12 Q. What is ongoing?</p> <p>13 A. We are planning to do more work in this.</p> <p>14 Q. What work are you planning to do?</p> <p>15 A. More biological work.</p> <p>16 Q. What type of work?</p> <p>17 A. Maybe look at animal studies, maybe looking</p> <p>18 at sequencing of some genes.</p> <p>19 Q. How far has that --</p> <p>20 A. I'm not sure yet.</p> <p>21 Q. I'm sorry. How far has that progressed?</p> <p>22 A. Not yet.</p> <p>23 Q. When you say not yet --</p> <p>24 A. We -- the ongoing part is just the cell</p> <p>25 line, the cell culture part.</p>

<p style="text-align: right;">Page 547</p> <p>1 Q. Do you have plans to do any other -- strike</p> <p>2 that. Do you have any current plans, sitting here</p> <p>3 today, for other cell studies or tests like you did in</p> <p>4 your manuscript involving talc?</p> <p>5 MS. O'DELL: Object to the form.</p> <p>6 Would you -- would you mind repeating the question, or</p> <p>7 read it back, please?</p> <p>8 THE WITNESS: What was the question?</p> <p>9 BY MR. HEGARTY:</p> <p>10 Q. Do you have plans to do -- do you have any</p> <p>11 current plans, sitting here today, for other cell</p> <p>12 studies or tests like you did in your manuscript</p> <p>13 involving talc?</p> <p>14 A. Do I have current right now going on in my</p> <p>15 lab right now?</p> <p>16 Q. Either going on in your lab, or that you</p> <p>17 plan to do or give thought to do?</p> <p>18 A. Yes, I am.</p> <p>19 Q. What are those?</p> <p>20 A. I'm planning to do more cell lines, and I'm</p> <p>21 planning to do the transformation assay.</p> <p>22 Q. What's a transformation assay?</p> <p>23 A. The one we spent three hours discussing.</p> <p>24 Q. The Aim III?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 549</p> <p>1 MR. HEGARTY: All right.</p> <p>2 THE VIDEOGRAPHER: We're going off</p> <p>3 the record, the time is 1:28.</p> <p>4 (There was a recess taken.)</p> <p>5 THE VIDEOGRAPHER: We're back on the</p> <p>6 record at 1:31.</p> <p>7 EXAMINATION BY MS. O'DELL:</p> <p>8 Q. Dr. Saed, I have a few questions for you. I</p> <p>9 think in front of you I put Exhibit 24, which was a</p> <p>10 copy of your preliminary study that counsel for J & J</p> <p>11 marked previously.</p> <p>12 A. Yes.</p> <p>13 Q. And if you'll turn to the last page of 24.</p> <p>14 It should be near the top, 'cause I pulled it out</p> <p>15 previously. Yeah. Is that it? Okay.</p> <p>16 If you'll turn to the last page of</p> <p>17 the exhibit. Just turn it over, I think, because it's</p> <p>18 front and back. It's a copy of your poster that</p> <p>19 counsel asked you about earlier.</p> <p>20 A. Correct.</p> <p>21 Q. And in the results as written on the</p> <p>22 left-hand side of the poster, is there a</p> <p>23 suggestion that the results are statistically</p> <p>24 significant?</p> <p>25 MR. HEGARTY: Objection, form.</p>
<p style="text-align: right;">Page 548</p> <p>1 Q. And how far along are those plans?</p> <p>2 A. Planning. I don't know.</p> <p>3 Q. Do you have a timetable for any of those --</p> <p>4 A. Not yet.</p> <p>5 Q. -- those -- those proposed tests?</p> <p>6 A. Not yet.</p> <p>7 Q. Have you gone -- strike that. Do you have</p> <p>8 plans beyond the thinking stage for any tests involving</p> <p>9 cell lines or invivo studies that involve talc?</p> <p>10 A. Other than what I just mentioned?</p> <p>11 Q. Other than what you talked about?</p> <p>12 A. Not -- not -- I don't think of anything</p> <p>13 right now. I may.</p> <p>14 Q. Have you prepared any written proposals --</p> <p>15 A. No.</p> <p>16 Q. -- for additional testing?</p> <p>17 A. None.</p> <p>18 MS. O'DELL: I think we're at five,</p> <p>19 Mark.</p> <p>20 MR. HEGARTY: Okay. All right.</p> <p>21 Thank you.</p> <p>22 THE WITNESS: Thank you.</p> <p>23 MR. HEGARTY: Give me a second.</p> <p>24 MS. O'DELL: I'm going to take a</p> <p>25 short break.</p>	<p style="text-align: right;">Page 550</p> <p>1 BY MS. O'DELL:</p> <p>2 Q. Do you report the results as statistically</p> <p>3 significant?</p> <p>4 A. Not as written in the results section,</p> <p>5 because it says marked increase. Marked doesn't mean</p> <p>6 they are statistically significant necessarily.</p> <p>7 Q. You also were asked some questions early on</p> <p>8 in your continued deposition this morning, and -- and</p> <p>9 in regard to the series of questions, you expressed</p> <p>10 confusion by the question. I think at one point you</p> <p>11 said there was a mixup. What did you mean by that?</p> <p>12 A. A mixup in the question, because the</p> <p>13 question was a compound question. Each part contradict</p> <p>14 the other.</p> <p>15 Q. Did you --</p> <p>16 A. That's my understanding.</p> <p>17 Q. Was your -- was your reference to mixup</p> <p>18 related to data in the lab notebook?</p> <p>19 A. No --</p> <p>20 MR. HEGARTY: Objection.</p> <p>21 THE WITNESS: -- not at all.</p> <p>22 BY MS. O'DELL:</p> <p>23 Q. Let me ask you to turn to what was marked as</p> <p>24 Exhibit 1. You can turn to it in your -- in the actual</p> <p>25 lab notebook if you'd like, but it's the lab notebook</p>

<p style="text-align: right;">Page 551</p> <p>1 for the data that's reported in your manuscript. Let 2 me ask you to turn to page -- I believe it is 39. 3 A. Yes. 4 Q. And it says -- I think it's Calculation Data 5 is written in at the top. 6 A. Yes. 7 Q. Do you see that? And you were asked a 8 number of questions about the column that's marked 9 Average. Do you recall those questions? 10 A. Yes. 11 Q. And Dr. Saed, who calculates the average and 12 the normalized average in -- in a table like this in 13 the lab notebook? 14 A. So all these data were submitted to our 15 biostatistician, and he analyzed all the statistics. 16 Q. Do you rely on the biostatistician in terms 17 of the type of data analysis that is performed? 18 A. I do. 19 Q. And is he or she, the biostatistician, the 20 person that decides the type of calculation that's 21 going to be done and how it is formulated into a 22 spreadsheet? 23 A. Correct. 24 Q. And do you defer to the biostatistician for 25 that type of contribution?</p>	<p style="text-align: right;">Page 553</p> <p>1 question? 2 A. I do. 3 Q. There was actually a series of questions. 4 In fact, Aim III -- does Aim III compose a number of 5 different types of tests? 6 MR. HEGARTY: Objection, form. 7 THE WITNESS: It does. 8 BY MS. O'DELL: 9 Q. And which of the tests listed in Aim III 10 have you completed? 11 A. We did -- we did them with our cell lines. 12 We did myeloperoxidase, we did iNOS, and we did -- we 13 did caspase-3, activity for apoptosis. 14 Q. Okay. And when you say MPO, what -- 15 A. Myeloperoxidase, and inducible nitric oxide 16 synthase, and then caspase-3, activity for apoptosis. 17 Apoptosis. 18 Q. And -- and any suggestion that Johnson & 19 Johnson counsel made that these tests were not 20 performed would be incorrect? 21 MR. HEGARTY: Objection, form. 22 THE WITNESS: They were performed in 23 our cell lines that we report in the manuscript, yes. 24 BY MS. O'DELL: 25 Q. Okay. You were asked about a submission to</p>
<p style="text-align: right;">Page 552</p> <p>1 A. Correct. 2 Q. Do you have any information that would 3 suggest that the information contained in the columns 4 calculated by the biostatistician are incorrect? 5 A. No. 6 Q. You've been asked a number of questions 7 today about documents that have been provided over 8 the -- prior to your initial deposition and -- and 9 since that time. Are you aware of any documents in 10 your possession that have not been produced? 11 A. I'm not aware. 12 Q. You were asked questions about a budget that 13 you prepared in September of 2017 that was marked as 14 Exhibit 44. 15 A. Yes. 16 Q. And it should be near the top. 17 A. I remember it. 18 Q. And if you'll -- when you have that in front 19 of you, Doctor, if you'll turn to page three of the 20 budget. And it -- particularly, you were asked -- 21 strike that. Let me start again. 22 You were asked a series of questions 23 about Aim III of the budget, and there were some 24 questions asked regarding a particular test that was 25 performed in relation to Aim III. Do you recall that</p>	<p style="text-align: right;">Page 554</p> <p>1 Health Canada. Did you submit the comments, to the 2 best of your knowledge, prior to the deadline for doing 3 so? 4 A. Yes. 5 Q. Was your -- when was your manuscript 6 accepted for publication by SRI approximately? 7 A. I believe January, around that time. 8 Q. Lastly, you were -- maybe not lastly, but 9 you were asked a series of questions regarding your 10 report, and specifically, the basis for your opinions. 11 Are your opinions in this case based on the research 12 that you conducted and that you have -- the data for 13 which you've included in your report and manuscript? 14 A. Yes. 15 Q. And are your opinions in this case also 16 supported by the scientific and medical literature? 17 MR. HEGARTY: Objection, form. 18 THE WITNESS: Yes. 19 BY MS. O'DELL: 20 Q. You mentioned that you anticipate doing 21 continued research in the future. Do you need 22 additional research to support the opinions that you've 23 provided in this case? 24 A. No. The opinion based on the data so far 25 collected, which is based on cell lines, is sufficient</p>

<p style="text-align: right;">Page 555</p> <p>1 to draw this conclusion --</p> <p>2 Q. And -- and --</p> <p>3 A. -- and we are -- go ahead.</p> <p>4 Q. No, please, go ahead.</p> <p>5 A. And we are planning to do some more work.</p> <p>6 Q. Okay. What level of confidence do you have</p> <p>7 in the opinions that you've offered in this case?</p> <p>8 A. Great confidence.</p> <p>9 Q. Would it be fair to say that you hold --</p> <p>10 that in your opinion it is far more than, quote, more</p> <p>11 likely than not that your opinions are supported by</p> <p>12 your data and research?</p> <p>13 MR. HEGARTY: Objection, form.</p> <p>14 THE WITNESS: My conclusion and</p> <p>15 opinion is based on data from my work here, and they</p> <p>16 are supported by it, yes.</p> <p>17 BY MS. O'DELL:</p> <p>18 Q. Last question, Doctor. You were asked a</p> <p>19 number of questions about invitro models and their</p> <p>20 usefulness in cancer research. Do invitro models</p> <p>21 reliably predict the pathogenicity of harmful</p> <p>22 particulates or other carcinogens in humans?</p> <p>23 MR. HEGARTY: Objection, form.</p> <p>24 THE WITNESS: Yes.</p> <p>25 MS. O'DELL: I've got nothing</p>	<p style="text-align: right;">Page 557</p> <p>1 MS. O'DELL: -- to you previously.</p> <p>2 So I don't want the record to be unclear on that.</p> <p>3 There may be some other things, but -- but what the</p> <p>4 doctor has testified to is he has provided everything</p> <p>5 in his possession.</p> <p>6 REEXAMINATION BY MR. HEGARTY:</p> <p>7 Q. Doctor, if you look at the abstract -- I'm</p> <p>8 sorry, look at the poster that you had -- we have been</p> <p>9 talked about today -- talking about today.</p> <p>10 A. Yes.</p> <p>11 Q. Do you have that in front of you?</p> <p>12 A. I have to find it. Yes.</p> <p>13 Q. You reported in this poster that treatment</p> <p>14 of 20 micrograms per milliliter of the cells with talc</p> <p>15 showed a marked increase in the anti-oxidant enzymes</p> <p>16 CAT, SOD-3, GSR, GPX1 and GSTP1, correct, at the</p> <p>17 20 microgram per milliliter level?</p> <p>18 A. I don't see where you're reading.</p> <p>19 Q. Well, I'm not necessarily reading a</p> <p>20 particular part, but this poster shows a marked</p> <p>21 increase in the enzymes CAT, SOD-3, GST, GPX1 and GSTP1</p> <p>22 at the 20 microgram level, correct?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 Where are you reading? Which table are you referring</p> <p>25 to?</p>
<p style="text-align: right;">Page 556</p> <p>1 further.</p> <p>2 MR. HEGARTY: Just a few follow-up</p> <p>3 questions. First, I just want to put on the record we</p> <p>4 want to -- want to request documents that the doctor</p> <p>5 apparently has not provided. There were abstracts</p> <p>6 mentioned today, there was correspondence mentioned</p> <p>7 today that -- that we hadn't seen.</p> <p>8 In particular, there's a cover</p> <p>9 letter to Reproductive Sciences, an abstract for Paris,</p> <p>10 an abstract for I think the other outlet --</p> <p>11 MR. WYATT: Honolulu.</p> <p>12 MR. HEGARTY: I'm sorry, the</p> <p>13 Honolulu -- the Honolulu presentation, and then there's</p> <p>14 the e-mail to Health Canada, so I just want to put on</p> <p>15 the record that --</p> <p>16 MS. O'DELL: Let me --</p> <p>17 MR. HEGARTY: -- we'll be making</p> <p>18 those requests.</p> <p>19 MS. O'DELL: Let me state two</p> <p>20 things, that the abstract from SRI -- SRI has been</p> <p>21 provided. The abstract to the SGO meeting in March was</p> <p>22 provided to Susan Sharko in December by e-mail, as well</p> <p>23 as the table that was provided, so those have been</p> <p>24 provided --</p> <p>25 THE WITNESS: We did.</p>	<p style="text-align: right;">Page 558</p> <p>1 MR. HEGARTY: I'm reading the</p> <p>2 Results section.</p> <p>3 THE WITNESS: In the Results</p> <p>4 section, where does it say 20 microgram?</p> <p>5 BY MR. HEGARTY:</p> <p>6 Q. Well, you say that -- you show increases in</p> <p>7 talc-treated ovarian cancer cell lines and in normal</p> <p>8 ovarian cancer cell lines, all compared to their</p> <p>9 controls -- their control.</p> <p>10 A. Yeah, but there's nothing about</p> <p>11 20 microgram.</p> <p>12 Q. So is it -- that's why I asked you. Does --</p> <p>13 do the results you report in the Results section apply</p> <p>14 to 20 microgram per milliliter dose?</p> <p>15 A. I can't -- I have to go and look through</p> <p>16 them. I can't remember right now.</p> <p>17 Q. You don't know if that's what you're</p> <p>18 reporting in this --</p> <p>19 A. No, no.</p> <p>20 MS. O'DELL: Objection.</p> <p>21 BY MR. HEGARTY:</p> <p>22 Q. -- Results section?</p> <p>23 A. No, no. That's not what I said. I said</p> <p>24 overall results, as I told you, this is preliminary</p> <p>25 results to show that whether there is a biological</p>

Page 559	Page 561
<p>1 effect of the exposure of talc to the cells, and that</p> <p>2 by itself is intriguing. That's the whole objective of</p> <p>3 this whole work. And if you want details of which one</p> <p>4 increased how much, I can't tell you from here. I have</p> <p>5 to go back to the data.</p> <p>6 Q. So you would have to look at the data? You</p> <p>7 couldn't look at the individual graphs?</p> <p>8 A. Very hard to see this. Very small. Barely</p> <p>9 I can see it.</p> <p>10 Q. So you can't tell by looking at the</p> <p>11 20 microgram per milliliter data, for example, SOD-3,</p> <p>12 and see if there was a marked increase in the</p> <p>13 anti-oxidant SOD-3?</p> <p>14 MS. O'DELL: Objection.</p> <p>15 THE WITNESS: As compared to</p> <p>16 control.</p> <p>17 BY MR. HEGARTY:</p> <p>18 Q. Yes.</p> <p>19 A. So yeah, it's hard for me to do.</p> <p>20 Q. Okay. Do you remember your</p> <p>21 biostatistician's name? You were not able to recall</p> <p>22 it.</p> <p>23 A. Steven Goyski something. I can find it.</p> <p>24 Q. Going back to your Aim III in Exhibit 44,</p> <p>25 which counsel asked you about. You were asked whether</p>	<p>1 Q. Do you have the galley pages yet for your --</p> <p>2 your Reproductive Sciences manuscript?</p> <p>3 A. Galley? The proof?</p> <p>4 Q. The proof.</p> <p>5 A. Not yet.</p> <p>6 Q. Are you -- do you have currently</p> <p>7 ongoing -- strike that. Do you have any ongoing</p> <p>8 inflammatory studies? In other words, are you doing</p> <p>9 any cell line treatments testing for inflammation</p> <p>10 currently?</p> <p>11 MS. O'DELL: Object to form.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Let me strike that. That's a bad example --</p> <p>14 question. Do you have any current studies looking at</p> <p>15 inflammation in ovarian cancer?</p> <p>16 MS. O'DELL: Object to form.</p> <p>17 THE WITNESS: This is the core of</p> <p>18 our lab. That's what we do.</p> <p>19 BY MR. HEGARTY:</p> <p>20 Q. Right. But do you have any current studies</p> <p>21 ongoing?</p> <p>22 A. Related to talc?</p> <p>23 Q. No. Related to inflammation in ovarian</p> <p>24 cancer?</p> <p>25 A. Of course.</p>
Page 560	Page 562
<p>1 you had done those tests and -- some of those tests,</p> <p>2 and you said you had done those in your cell lines,</p> <p>3 correct?</p> <p>4 A. Yes.</p> <p>5 Q. You did not do those tests in cells</p> <p>6 suspended in agar at 500 cells per well, and then</p> <p>7 incubated in a humidified incubator for 14 to 21 days,</p> <p>8 correct?</p> <p>9 A. There is need to do that.</p> <p>10 MS. O'DELL: Object. Object to the</p> <p>11 form.</p> <p>12 BY MR. HEGARTY:</p> <p>13 Q. Did you -- you did not do those tests in</p> <p>14 those --</p> <p>15 A. Specific environment?</p> <p>16 Q. -- involved in agar?</p> <p>17 A. In this specific environment, no. There was</p> <p>18 no need to do that.</p> <p>19 Q. You mentioned you submitted your comments</p> <p>20 to Health Canada in advance of the deadline. How</p> <p>21 did you know what the deadline was to submit your</p> <p>22 comment?</p> <p>23 A. I went -- I went to the website, and I can't</p> <p>24 really remember when I did that. That's the whole</p> <p>25 idea.</p>	<p>1 Q. Okay. How many such studies do you have</p> <p>2 going on?</p> <p>3 A. I don't know. I can't remember.</p> <p>4 Q. Can you remember one of them?</p> <p>5 A. Yeah.</p> <p>6 Q. Which one can you remember?</p> <p>7 A. We have identified a new role</p> <p>8 myeloperoxidase, which is a key inflammatory marker,</p> <p>9 and we found that we were the first to report that it</p> <p>10 is expressed in ovarian cancer cells, which it's not</p> <p>11 supposed to be there, and then people after us</p> <p>12 confirmed that.</p> <p>13 We found that the form that is</p> <p>14 expressed in epithelial ovarian cancer is the monomer</p> <p>15 form not the dimer form that is found in macrophages.</p> <p>16 We -- interestingly, we found that ovarian cancer</p> <p>17 patients, they have higher levels of oxidated stress in</p> <p>18 their plasma.</p> <p>19 And we ran plasma assay and</p> <p>20 looked at the form of MPO, and we found that it's</p> <p>21 a monomer form. Monomer means it is reduced</p> <p>22 because of oxidation, high level of oxidation. So</p> <p>23 that's ongoing now in our lab. And we just submitted a</p> <p>24 grant.</p> <p>25 Q. You were asked by counsel if you have plans</p>

<p style="text-align: right;">Page 563</p> <p>1 to do other studies, which I had asked you about, 2 involving talc in cell lines, and you said we are 3 planning to do these. Who is "we"? 4 A. We, our lab. 5 Q. Okay. When you say your lab, who are you -- 6 who are you including in that? 7 A. My lab, my research assistants, my 8 collaborators, my fellows. 9 Q. And who are those individuals? 10 A. Dr. Harper, my -- Dr. Rong, Florie, 11 Dr. Morris, myself, and -- who else can I remember. 12 And we have some -- a guy from Pathology doing some 13 work for us, yes. 14 Q. And do you know who the guy from Pathology 15 is? 16 A. Yes. His name -- I'm really bad with names. 17 Do you want his name? 18 Q. If you can remember it. 19 A. I can't remember his name, but he -- he does 20 the immunofluorescent staining for us. We have several 21 projects ongoing right now in our lab. 22 MR. HEGARTY: That's all questions I 23 have. 24 MR. LOCKE: Can I just ask one 25 really quick question?</p>	<p style="text-align: right;">Page 565</p> <p>1 CERTIFICATE OF NOTARY 2 STATE OF MICHIGAN) 3) SS 4 COUNTY OF OAKLAND) 5 I, Jennifer L. Ward, Certified Shorthand Reporter, 6 a Notary Public in and for the above county and state, 7 do hereby certify that the above deposition was taken 8 before me at the time and place hereinbefore set forth; 9 that the witness was by me first duly sworn to testify 10 to the truth, and nothing but the truth, that the 11 foregoing questions asked and answers made by the 12 witness were duly recorded by me stenographically and 13 reduced to computer transcription; that this is a true, 14 full and correct transcript of my stenographic notes so 15 taken; and that I am not related to, nor of counsel to 16 either party nor interested in the event of this cause. 17 18 19 _____ 20 Jennifer L. Ward, CSR-3717 21 Notary Public, 22 Oakland County, Michigan 23 24 My Commission expires: 10-27-2019 25</p>
<p style="text-align: right;">Page 564</p> <p>1 EXAMINATION BY MR. LOCKE: 2 Q. This relates to your Health Canada contact 3 that you had recently. When you contacted 4 Health Canada, did you inform Health Canada that you 5 are a litigation consultant? 6 A. No. 7 MS. O'DELL: Object to form. 8 THE WITNESS: No, I did not. 9 MR. LOCKE: Thank you, Doctor. 10 THE WITNESS: Thank you. 11 MR. HEGARTY: Thank you. 12 THE VIDEOGRAPHER: We're going to go 13 off the record, the time is 1:48. 14 (The deposition was concluded 15 at 1:48 p.m.) 16 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: right;">Page 566</p> <p>1 STATEMENT OF DEPONENT 2 3 4 5 6 I have reviewed the above transcript 7 and have listed corrections, if any, on the attached 8 errata sheet, 9 10 this ____ day of _____, 20 ____. 11 12 13 14 _____ 15 SIGNATURE OF THE WITNESS 16 17 SUBSCRIBED AND SWORN to before me this ____ day of 18 _____, 20 ____. 19 20 21 22 _____ 23 NOTARY PUBLIC 24 My Commission expires: _____. 25</p>

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Exhibit F

The role of talc powder exposure in ovarian cancer: mechanistic approach

Our laboratory's primary research has focused on investigating the role of oxidative stress in the pathogenesis of epithelial ovarian cancer (EOC) for many years. We have reported that EOC tissues and cells manifest a pro-oxidant state characterized by an increased expression of key pro-oxidant enzymes such as inducible nitric oxide synthase (iNOS) and NAD(P)H oxidase, as well as an increase in nitric oxide (NO) levels [1-3]. Additionally, we have shown that EOC cells manifest lower apoptosis, which was markedly induced by inhibiting iNOS, indicating a strong link between apoptosis and NO/iNOS pathways in these cells [2]. In an attempt to identify the mechanism of apoptosis in EOC cells, we examined the process of S-nitrosylation of caspase-3, which is known to inhibit its activity resulting in lower apoptosis. There was a significant increase in S-nitrosylation of caspase-3, which correlated with a significant decrease in caspase-3 activity in EOC cells. Myeloperoxidase (MPO) is a key oxidant enzyme that utilizes NO produced by iNOS, as a one-electron substrate generating NO⁺, a labile nitrosating species [4-7]. Indeed, we were the first to report that MPO was expressed by EOC cells and tissues [1]. Collectively, this work suggests that MPO is a key player in regulating apoptosis in EOC cells, but also highlights a possible cross-talk between iNOS and MPO [1]. Additional findings from our laboratory highlighted the potential benefits of the combination of serum MPO and free iron as biomarkers for early detection and prognosis of ovarian cancer [8].

Epidemiologic studies have established the role of family history as an important risk factor for both breast and ovarian cancers [9]. A woman's risk for ovarian cancer is three times higher if she has a close relative who has had ovarian cancer. Genomic studies of high-grade serous cancer have identified molecular subtypes that are associated with distinct biology and clinical outcome. It is well known that germline mutations in BRCA1 or BRCA2 result in a predisposition to ovarian cancer at a rate of only 20-40%, suggesting the presence of other unidentified mutations in other predisposition genes [10-13]. Additional genetic variations, many of which have been identified in recent genome-wide association studies (GWAS), have been hypothesized to act as low to moderate penetrant alleles, which contribute to ovarian cancer risk, as well as other diseases [12, 14, 15]. Thus, there is an emerging consensus that most of the genetic component of ovarian cancer risk is due to genetic polymorphisms that confer low to moderate risk [16]. Single nucleotide polymorphisms (SNPs) occur because of point mutations that are selectively maintained in populations that are distributed throughout the human genome at an estimated overall frequency of at least one in every 1000 base pairs [17]. Non-synonymous SNPs substitute encoded amino acids in proteins, and are more likely to alter the structure, function, and interaction of the protein [12, 18]. Therefore, SNPs are good candidates as disease-modifiers and have been associated with an altered cancer risk. Because reactive oxygen species (ROS) can cause severe damage to DNA, protein, and lipids they can be considered as an important class of carcinogens [19]. Therefore, antioxidant defense enzymes are of great importance to control the cellular redox level and regulate accumulation of ROS. Our recently published study found that chemoresistant EOC cells manifested specific point mutations, which are associated with altered enzymatic activity, in key redox enzymes that are not detected in sensitive counterparts [20]. Causality was established by the induction of point mutations that corresponded to known change of function SNPs in sensitive EOC cells, which resulted in a significant increase in the level of chemoresistance. These findings indicate that chemotherapy induces specific point mutations, which correspond to change of function SNPs, in key redox enzymes that contribute to the acquisition of chemoresistance in EOC cells, highlighting a potential novel mechanism. Here, our objective is to determine whether talc can induce such mutations in the key redox enzymes, contributing to the oncogenic phenotype.



The persistent generation of cellular reactive oxygen species (ROS) is a consequence of many factors including exposure to carcinogens, infection, inflammation, environmental toxicants, nutrients, and mitochondrial respiration [21-24]. Talc and asbestos are both silicate minerals, however the carcinogenic effects of asbestos have been extensively studied and documented in the medical literature [25]. Asbestos fibers in the lung initiate an inflammatory and scarring process, and it has been proposed that ground talc, as a foreign body, might initiate a similar inflammatory response [25]. Inflammation has long been associated with cancer. Although there is strong epidemiological evidence to suggest an association between talc use and ovarian cancer, the direct link and precise mechanisms have yet to be elucidated.

Aim I: Determine the effect of talc on the redox balance in normal ovarian surface epithelial and ovarian cancer cells. To accomplish this aim, we will measure the activity and expression of select key oxidants and antioxidants in cell culture lysate from primary cultures of ovarian surface epithelial cells (n=3) as well as in ovarian cancer cell lines (n=3), as described in general methods, before and after exposure to talc. Cells will be exposed to increasing doses of talc (100, 200, 500 µg/mL) for 24, 48, and 72 hours. Based on our extensive published results, the following markers will be evaluated for activity and expression: NAD(P)H oxidase (NOX2 and NOX4), nitrate/nitrite, glutathione reductase (GSR), glutathione peroxidase (GPX), glutathione S-transferase (GST), total glutathione (GSH), iNOS, MPO, catalase (CAT), superoxide dismutase (SOD), and 8-OHdG. Total RNA and protein will be extracted for the evaluation of marker levels will be assessed by a combination of real-time RT-PCR and ELISA. ***We expect that exposure of normal ovarian surface epithelial cells to talc will alter the redox balance to mimic that observed in ovarian cancer cells. Furthermore, we expect that talc will further alter the redox balance in ovarian cancer cells which will contribute to the maintenance and severity of the oncogenic phenotype as well as promote metastasis. We hope to accomplish this Aim by October 10th, in order to submit our findings to our premier society, Society of Reproductive Investigation (SRI).***

This Aim is divided into 2 phases.

Phase I, PCR.

Estimated time to execute this Aim is 4 weeks.

Supplies \$25,840

Labor \$11,500

Data Analysis/Statistics \$1500

Phase II, ELISAs.

ELISA kits are very expensive and we propose to run ELISAs only for makers that showed differential expression between treated and untreated.

Each ELISA will cost \$10,500.

Aim II: Determine whether exposure to talc can induce point mutations that correspond to known SNPs in key oxidant and antioxidant enzymes as well as BRCA1/2, in normal ovarian surface epithelial and ovarian cancer cells. To accomplish this aim, we will perform SNP genotyping analysis before and after talc exposure (500 µg/ml, 72 hours) utilizing DNA isolated from epithelial ovarian cancer cell lines (n=8) and normal ovarian surface epithelial cell lines (n=3), as described in general methods. The TaqMan® SNP Genotyping Assay Set (Applied Biosystems, Carlsbad, CA) will

be used to genotype the SNPs, as previously described [20]. The Applied Genomics Technology Center (AGTC, Wayne State University, Detroit, MI) will perform this assay. Analysis will be done utilizing the QuantStudio™ 12K Flex Real-Time PCR System (Applied Biosystems). The SNPs will be selected based on the results of Aim I. We have previously analyzed the following SNPs in EOC cells and patient DNA: rs4673 (CYBA), rs4880 (MnSOD), rs2297518 (NOS2), rs3448 (GPX1), rs1001179 (CAT), rs2333227 (MPO), and rs1002149 (GSR) [20, 26]. Due to the known strong association between BRCA1/2 and ovarian cancer, we propose to analyze the following SNPs: dbSNP rs67284603, rs80357569, rs80359874 (BCRA1) and rs80359671, rs80359368, rs80359352 (BRCA2). **We expect that exposure of normal ovarian surface epithelial cells to talc will induce specific point mutations in key redox enzymes as well as BRCA1/2, thereby acquiring a phenotype/genotype similar to ovarian cancer cells. Furthermore, exposure of ovarian cancer cells to talc will induce these mutations which may contribute to the maintenance and severity of the oncogenic phenotype as well as promote metastasis. Collectively, the results from Aim I and II will elucidate a potential mechanism by which talc powder exerts its oncogenic effects.**

Estimate time to execute this Aim is 3 weeks.

Phase I will be to treat and collect cells for analysis.

Supplies: \$17,080

Labor \$8,625

Phase II: SNP analysis by Core Facility

This will cost \$11,700

Aim III: Exposure to talc results in neoplastic transformation of normal ovarian surface epithelial cells. To accomplish this aim, we will assess the ability of talc exposure to cause neoplastic changes in normal ovarian surface epithelial cells (n=3) utilizing a neoplastic transformation assay, as previously described [27]. Moreover, we have recently established a mechanism of decreased apoptosis specific to epithelial ovarian cancer cells through S-nitrosylation of caspase-3 in response to a cross-talk between MPO and iNOS, key redox and inflammatory enzymes. In this aim we will determine whether this mechanism, a characteristic of ovarian cancer cells, will hold true for the transformed normal ovarian surface epithelial cells. Normal ovarian surface epithelial cell lines will be treated with talc (optimum dose and time point determined in Aim I), cells will be collected, washed and suspended in agar at 500 cells/well and layered on top of a base of 0.8% agar in a 96 well plate, per the manufacturer protocol (Cell Transformation Detection Assay, Millipore). The plates will be incubated at 37°C in a humidified incubator for 14-21 days. Colonies will be quantified a cell quantification solution and color change detected at 490nm. Both positive (MNNG and TPA) and negative controls (agar without cells) will be included. The activity and the expression of the following markers will be evaluated before and after exposure to talc; MPO, iNOS, caspase-3, apoptosis, and S-nitrosylation of caspase-3 utilizing a combination of ELISA, real-time RT-PCR and Western blot, all routinely established methods in our laboratory. **We expect that exposure of normal ovarian surface epithelial cells to talc will result in neoplastic transformation of these cells over time, which is critical in establishing a cause and effect relationship. We also expect that exposure of normal ovarian surface epithelial cells to talc will result in increased caspase-3 S-nitrosylation and decreased apoptosis similar to what is observed in ovarian cancer cells.**

Estimate time to execute this Aim is 4 weeks.

Phase I will be the transformation assay
Supplies \$12,400
Labor \$7,500

Phase II will be the S-nitrosylation of caspase-3 assay/apoptosis
Supplies \$6,500
Labor \$6,300
Data Analysis/Statistics \$900

General Methods: *All experiments will be performed in triplicate. Samples will be subjected to the following assays according to the manufacturer's protocols:*

Human EOC cell lines, MDAH-2774 (CRL-10303), SKOV-3 (HTB-77), OV90 (CRL-11732), TOV-21G (CRL-11730), TOV-112D (CRL-11731), OVCAR-3 (HTB-161), are obtained from American Type Culture Collection (ATCC), and are all cultured with media supplemented with fetal bovine serum (FBS, Innovative Research) and penicillin/streptomycin according to the manufacturers' protocols. The OV433 EOC cell line was a kind gift from Gen Sheng Wu at Wayne State University, Detroit, MI [28]. A2780 EOC cells are obtained from Sigma Aldrich and are cultured in HyClone RPMI-1640 (Fisher Scientific) with FBS, per the manufacturer's protocol.

Primary ovarian surface epithelial cells (n=3): Human primary ovarian surface epithelium (HOSEpiC, ScienCell Research Laboratories) were cultured with Ovarian Epithelial Cell Medium, as previously described [29]. Two additional ovarian surface epithelial cell lines will be obtained from Cell Biologics and ABM, and will be cultured per the manufacturer's protocols.

Protein Extraction: Total protein concentration of cell lysates will be measured with the Pierce BCA Protein Assay Kit (ThermoFisher Scientific) per the manufacturer's protocol. Cell lysates will be prepared as previously described [30].

Extraction of RNA and real-time RT-PCR. RNA will be extracted from EOC cells and their chemoresistant counterparts and will be utilized to determine the mRNA levels of β -actin, MPO, GPX, GSR, SOD, GST, NOX2, NOX4, CAT, and iNOS utilizing specific primers designed with the help of software program, Beacon Designer (Premier Biosoft) as we have previously described [1, 20, 30, 32, 33].

Detection of S-nitrosylation of caspase-3: S-nitrosylation will be determined with the S-nitrosylation Detection Kit (Cayman Chemical), per the manufacturer protocol in cell lysates from normal ovarian surface epithelial cells or ovarian cancer cells from the different treatments. Caspase-3 protein will be immunoprecipitated with anti-caspase-3 monoclonal antibody conjugated with protein A/G plus agarose beads. Biotinylated proteins will be separated by SDS-PAGE and detected using nitrosylation detection reagent I (HRP) according to the manufacturer's protocol as previously described [1].

ELISAs – Unless otherwise stated, all assays will be performed utilizing cell lysate according to manufacturer's protocols.

Apoptosis will be assessed by the TUNEL assay (Promega) and the Caspase-3 Colorimetric Activity Assay (Cayman Chemical) as we have previously described [3, 33]. Oxidant enzyme activity and levels will be determined with the Myeloperoxidase Enzyme Immunometric Assay Kit (Enzo Life Sciences) and the nitrate/nitrite colorimetric assay (Cayman Chemical) to measure the levels of stable NO by-products, NO_2^- and NO_3^- , as an indication of NO production, both as previously described [1, 8]. Antioxidant enzyme activities and levels will be determined using Catalase Assay Kit, Superoxide Dismutase Assay Kit, Glutathione assay kit, all

from Cayman Chemical, and the Glutathione Reductase Assay Kit, Glutathione Peroxidase Assay Kit and Glutathione S-Transferase Assay Kit, will be used per the manufacturer's protocol or as previously described [30, 34]. The DNA/RNA oxidative damage assay kit (Cayman Chemical), measures DNA/RNA oxidative damage in all three oxidized guanine species; 8-hydroxy-2'-deoxyguanosine from DNA, 8-hydroxyguanosine from RNA, and 8-hydroxyguanine from either DNA or RNA. This assay measures the amount of DNA/RNA tracer bound to oxidatively damaged guanine that forms a complex that is fixed to the microplate via a monoclonal antibody, which can be detected at 412 nm following an enzymatic reaction with Ellman's Reagent.

References

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